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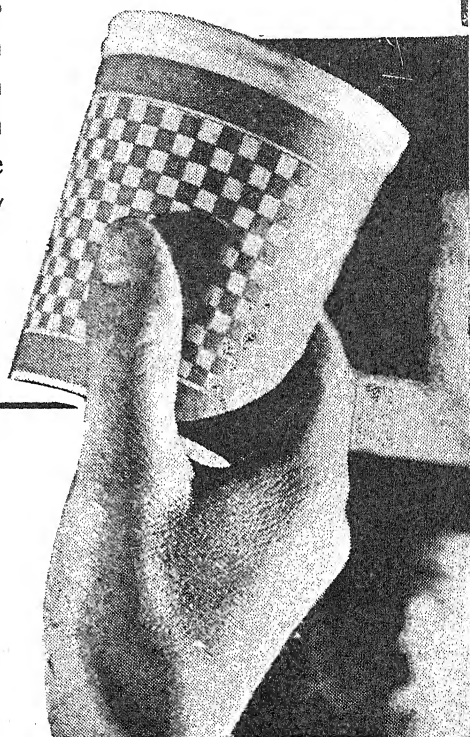
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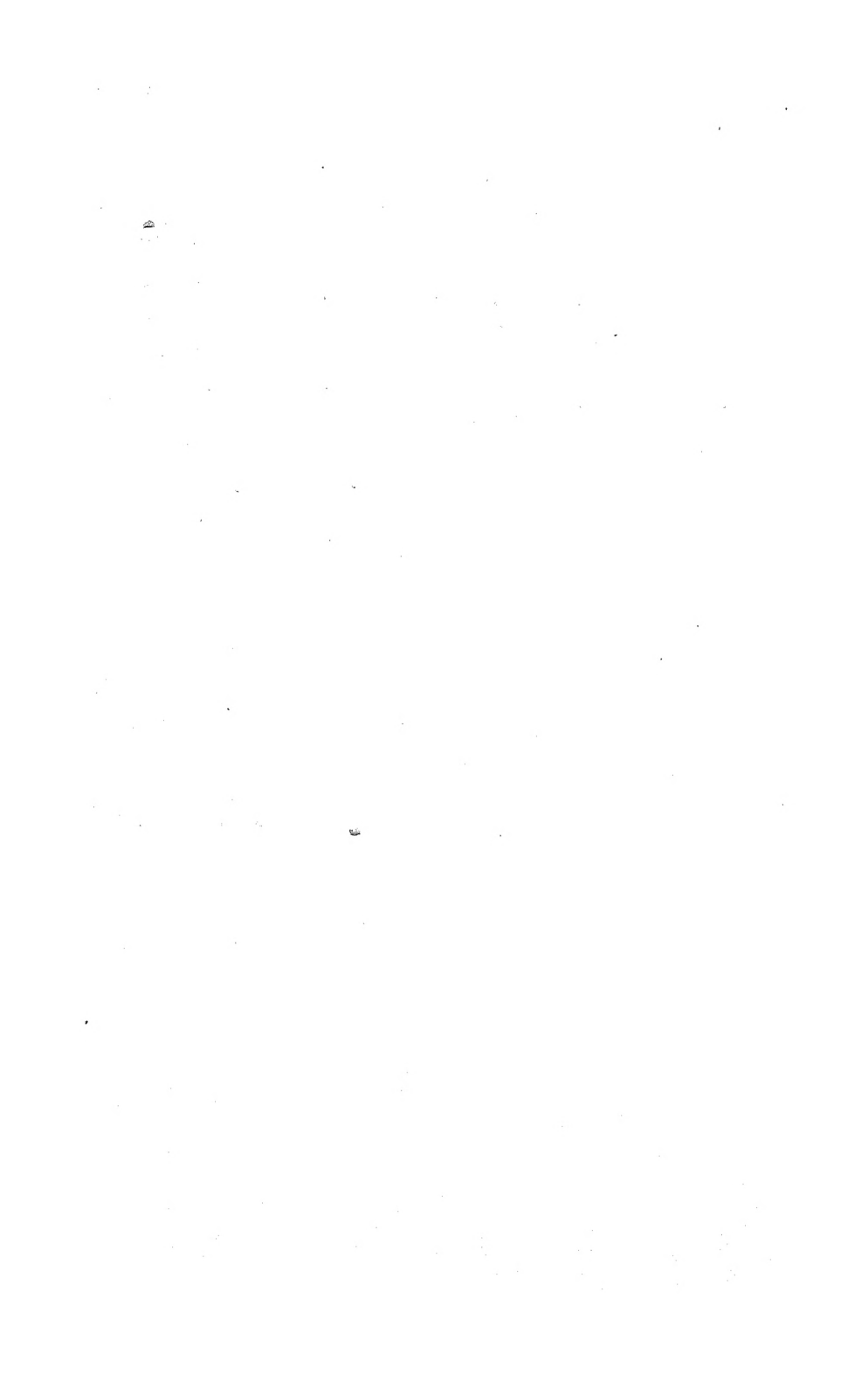
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The late LORD DARESBURY, C.V.O.

MEMOIR OF THE LATE LORD DARESBUY, C.V.O.

At the age of 71 years, Lord Daresbury passed away in London on Sunday, October 23rd, 1938. His death deprives the British Dairy Farmers' Association of one of its most loyal and ardent members.

Lord Daresbury—as Sir Gilbert Greenall, Bart.—joined the Association in 1904 and accepted the office of President in 1914. The following year he was elected a Vice-President, a position he held until 1929 when he again occupied the Presidential chair. In 1930 he was once more elected President, and from 1931 until his death remained a Vice-President.

His sound advice and keen interest in the Association's activities and in the dairy industry generally, extended over very many years, will be sadly missed by all members, especially by those of the Council with whom he was closely associated.

Lord Daresbury's connection with the British Dairy Farmers' Association represented only a small proportion of his many activities. His valuable association with the Royal Agricultural Society of England is well known and needs no further reference here, except to mention that it may be safely stated that he, more than any other man, was responsible for bringing "the Royal" to its present pre-eminent position amongst Societies and Shows.

He was one of the promoters, as well as Chairman of the Board of Directors, of the International Horse Show held for many years at Olympia. He was also a member of the Royal Commission on Light Horse Breeding and at one time or another was President of the Hunters' Improvement; Hackney Horse; Polo and Riding Pony and the National Light Horse Breeding Societies. He was also a Past-President of the Smithfield Club.

At one time Lord Daresbury maintained a most successful herd of Jerseys at his Walton Estate, from which animals were exhibited at all the principle Agricultural Shows and gained a wonderful record of successes. Eventually he disposed of this herd and interested himself in Dairy Shorthorns, building up two very fine herds, one at his Irish estate and the other at Walton Hall, Warrington. He was President of the Shorthorn Society in 1919 and 1934, and of the Dairy Shorthorn Association in 1912, 1921 and 1929.

Another of his activities was the breeding of pigs, and at various times he owned Large Whites, Middle Whites and

Berkshires. In recent years, however, he favoured Large Whites only, and to-day his Walton Herd is deservedly famous throughout the agricultural world at home and abroad. Lord Daresbury was elected President of the National Pig Breeders' Association on four occasions.

He was also an active supporter of the Royal Lancashire Agricultural Society, the Cheshire Agricultural Society, the Federation of Lancashire and Cheshire Agricultural Societies and of many other Agricultural Bodies.

In addition he was a member of the Council of the Royal Veterinary College, the Farmers' Club and of the Central and Associated Chambers of Agriculture, and acted as Chairman of the Live Stock Committee of the Relief of Allies Fund.

The County of Lancashire is greatly indebted to Lord Daresbury for his generous gift towards the cost of building the Parish Church and Schools in Warrington and for his liberal donations to the Churches of St. Helens and Bank Quay. Also, during the Great War, for providing two hospitals and, with his firm of Messrs. Greenall, Whitley and Co., Ltd., for the provision of an ambulance and donations towards a fund to enable men who had left the Services to start in local businesses. Among his Civic responsibilities he was a Deputy Lieutenant for the County of Lancaster and High Sheriff of Cheshire.

Lord Daresbury's personal qualities of kindliness and tact and his readiness to assist others earned for him the respect and love of all who knew him, and his death is deeply mourned by the whole of the agricultural and dairy world.

THE CONFERENCE AND TOUR IN FINLAND, 1938.

By H. G. ROBINSON, M.Sc.

The British Dairy Farmers' Association Conference party went further afield than usual in their visit which took them to Finland this year, and for this reason a full fortnight was allotted for the tour. The trip had special attractions from the fact that the route provided a combination of travel by boat and train and that we passed through Denmark and Sweden. Although three days were occupied in reaching Finland, the experience of journeying through these other Scandinavian countries made this expenditure of time well worth while.

The following comprised the party :—

Mr. C. A. Brooks, The Lecture House, Denham, Colchester.

† Mr. F. J. Bull, 28, Russell Square, London, W.C. 1.

Mr. John Cotton, Chellaston, near Derby.

‡ Dr. T. J. Drakeley, 12, Ringwood Avenue, London, N. 2.

Mrs. T. J. Drakeley.

Mr. Albert Hague, The Creamery, Orders Lane, Kirkham.

Mr. T. C. Heald, 16, Cedar Road, Gatley, Cheshire.

Mrs. T. C. Heald.

Mr. James Hill, Elswick Grange, Elswick, Kirkham.

§ Mr. R. O. Hubl, 28, Russell Square, London, W.C. 1.

Mr. D. P. Lockett, Hill Farm, Moreton Wood, Whitechurch.

Mr. J. Nicholson, 10, St. George Street, London, S.W. 1.

Miss S. H. Nix, Glenhaven, Branscombe Gardens, N.21.

Mr. M. J. Peters, Cuillins, Manor Road, Reigate, Surrey.

Mr. J. Pye, The Creamery, Orders Lane, Kirkham, Lanes.

Mr. F. Read, Tankerton, Styall Road, Wilmslow.

Mrs. F. Read.

* Mr. H. G. Robinson, The Principal's House, Sutton Bonington, Loughborough.

Mr. A. E. Sheehan, Australia House, Strand, W.C.2.

Mr. P. B. Smith, Wigboro' Wick, St. Osyth, Clacton-on-Sea.

Mrs. Jessie Tait, Almont House, Pinwherry, Girvan.

Mr. G. E. Taylor, Aspley Hall, Nottingham.

Mr. T. D. Williams, 20, Seaforth Gardens, Winchmore Hill, N. 21.

* Chairman of Conference Party.

† Secretary.

‡ Consulting Chemist.

§ Chief Clerk.

The party left Liverpool Street Station on the afternoon of Saturday, 28th May, and crossed over to Esbjerg from Harwich, reaching Denmark about 25 hours after leaving London. The trip across the North Sea was made in the Motor Ship "England," and the sea was perfectly calm. The period spent on board provided a good opportunity for the members of the party to get to know each other. From Esbjerg a Diesel-engined train took us to Copenhagen, which was reached just before midnight on Sunday, 29th May. Here a very short night was spent in the Grand Hotel, for the party left at 5.25 a.m. on Monday, 30th May, for Stockholm. This involved another experience of a train ferry to Malmo, and thence a very interesting train journey through Sweden to Stockholm, which was reached about 4.0 p.m.

Certain impressions of Swedish farming were gathered as one passed through the country in the train. Full use appeared to be made of the land, which was in good order, and the crops in general looked well—certainly in marked contrast to the drought-affected England that we had left. The train journey was most enjoyable and comfortable, and for those members who wanted to have an opportunity of taking photographs the observation car at the rear of the train proved very convenient. The train was electrically driven, from overhead power lines, and electric power cables seemed to be everywhere. The country throughout Sweden was well afforested, with pines and silver birch much in evidence. The live stock were principally cattle, mostly of the Friesian type, and tethered stock were seen on many farms. There were hardly any sheep to be seen. One was surprised at the number of fields that were cultivated even though full of boulders, while it was a common feature to see the stacks of hay and the muck heaps in the centre of the fields, rather than at the sides, as is usual in England. The heaps of farmyard manure were covered with straw for protection. Of the crops that we saw in passing, sugar-beet was well advanced and much rye was in ear.

The journey from Stockholm to Finland was made by boat. The route was threaded through a succession of delightful islands in the Baltic, and the sea was again perfectly calm. A sea fog in the evening delayed our progress, and admiration must be expressed for the skill that was shown in navigating a route that is beset with many hidden dangers. It was on this Finnish boat that the party was introduced to typically Finnish fare and the evening meal on board proved to be one of the "high lights" of the journey. Most members of the party helped themselves so liberally to the dishes provided on the centre table that it was only when the soup, fish, chicken and

ices appeared later that it was realised the meal had been made from the hors d'œuvres dishes. The large variety of meat and fish dishes proved to be a feature of Finnish meals, coupled with the length of time spent in serving food. Thus a typical lunch or dinner on board or in a Finnish hotel or restaurant took about 1½ hours. The Finns have two proverbs which illustrate their attitude to life in this respect, namely, "there is nothing so much as time," and "God didn't create hurry." The only place where hurry appeared to be vital in Finland was when crossing a road in Helsinki, since the motor traffic appeared to take little or no notice of pedestrians.

Abo, the port of arrival in Finland, was reached about 10 a.m. on Tuesday, 31st May, and two members of the Finnish Travel Bureau met the party. These were language students, who gained experience in languages by meeting visiting parties. The trip by train from Abo to Helsinki, the capital of Finland, occupied about three hours. It was at once evident that a country with very different problems from those faced in England had been reached, and the first impression of Finland was of a land of forests and lakes with clearings where intensive agriculture was practised. The fields were cut up by open drains at intervals of 10 or 12 yards, and the grass fields were covered with a dense population of dandelions. In fact most of the party regarded dandelions as a national pest in Finland.

Before dealing with the actual tour some general information about the country will not be out of place. Located in the centre of Northern Europe, Finland has an area of approximately 148,000 square miles, which makes it the seventh largest country in Europe. The large number of inland lakes, totalling about 70,000, with an area of about 17,000 square miles, is a feature of the country. Finland's neighbours are Sweden in the west, Norway in the north-west and Soviet Russia along the whole of the eastern boundary. From 1157 to 1809, Finland was a Swedish possession, but from 1809 until 1917 it was joined to Russia as an autonomous Grand Duchy and did not achieve independence until the latter year when a republic was established. To-day there are relatively few traces left of the Russian association, but the Swedish influence is still marked by the continuation of the Swedish language amongst a section of the population, together with certain organised efforts to perpetuate the Swedish associations through schools, theatres, &c. To-day, however, Finland must be regarded as a young country with a refreshingly youthful outlook, and in this light, admiration must be extended for the rapidity and efficiency with which it has set its house in order.

Twenty years is a relatively short period in which to establish a definite tradition, but the Finnish people have tackled their problems with a virility which is typical of newly-freed races, though for hundreds of years past the historical records emphasise the existence of a sturdy independence, fostered by educational work that began at the time of the Reformation. The appreciation of educational influences is particularly obvious from the existence of good schools and universities. Next to the churches, the schools are the finest buildings in the principal towns.

The total population is 3,760,000, of which about 300,000 are Swedish speaking, and the religion is almost entirely Lutheran. At the last census in 1930 nearly 60 per cent. of the population were engaged in agriculture and forestry, industry only accounting for 17 per cent. The tendency is for industry to develop and to attract more workers into it and away from agriculture, but the agricultural balance is still very much on the right side in respect of labour.

The following estimate was made in 1936 of the distribution and use of land in Finland:—

	Area in Acres.	Percentage of Total.
Orchards, &c.	18,980	0·02
Fields (arable)	6,384,133	7·33
Natural meadows	908,460	1·04
Cultivated pastures	80,000	0·09
Forest land, &c.	79,727,678	91·52
	87,109,251	100·00

It will be appreciated that the bulk of the arable acreage is found in the southern half of Finland, and this is the part which is the most developed. Actually the arable acreage has been increased by over 1,250,000 acres in the last 16 years.

The position of landownership is interesting. Thus, whereas there were about 100,000 landowners in 1901, the number had increased to 450,000 in 1931. One of the first acts following the attainment of independence was to free the leased areas, and over 90 per cent. of the farms in Finland are now owned by the occupiers. At the 1930 census, the rural population was composed as follows:—landowners, 62 per cent.; tenant farmers, 6 per cent.; farm workers, 32 per cent. It will be gathered from

these figures that Finland is a land of relatively small holdings. Thus, more than one-third of the cultivated acreage is associated with farms that have from 25 to 65 acres of arable, but there are over 200,000 farms that have less than 25 acres of arable land. It should be observed that in the case of the small holdings, forestry work provides additional income, and this, indeed, is a steadying factor in Finnish agricultural life. The financial stability of Finnish farmers is such that, in 1931, the debts of 287,171 farmers amounted to about £21,500,000, but the assets amounted to nearly £130,000,000, the debts being about 17 per cent. of the assets. About one-third of the farmers were entirely free from debts, and only 9 per cent. were indebted up to 50 per cent. or more of their assets.

It must not be assumed from this that there are no problems in connection with land ownership in Finland. One of these is the provision of warm buildings which are necessary in view of the severity of the climate in winter. A capital expenditure which works out at about £8 per acre of arable land is invested in buildings for the housing of stock, and this represents from 40 to 50 per cent. of the entire capital required, and which in Finland is regarded as a heavy outlay.

The distribution of crops covers a wide field and the percentage allocation of the 6,000,000 acres or so of cultivated land to the different crops is given in the accompanying table:—

Per cent.			Per cent.		
Winter wheat	...	0.9	Pasturage	...	6.2
Spring wheat	...	1.1	Green fodder	...	0.8
Rye	...	10.0	Potatoes	...	3.3
Barley	...	5.0	Swedes	...	0.7
Oats	...	19.3	Other root crops	...	0.4
Mixed crops	...	0.7	Flax and hemp	...	0.2
Leguminous crops	...	0.6	Other plants	...	0.1
Hay seed	...	0.8	Fallow land	...	6.3
Hay for fodder	...	42.7	Rest of area	...	0.5
					100.0

Over 70 per cent. of the cultivated area is devoted to the production of cattle food and, as indicated later, this is quite a feature of Finnish farming. The general aim is to achieve relative independence, and this applies even to the manuring of the land as well as to the feeding of live stock. Thus, cattle manure is the standby, but this is only produced in a quantity to allow the equivalent of two tons of manure per acre per annum of arable land. Artificial fertilizers are employed but not in any considerable quantity up to the present.

The average yields obtained from the various crops are not high and do not compare favourably, as a rule, with our own yields in this country. These are set out in the accompanying table:—

	Yield per acre.		Yield per acre.
Wheat ...	24½ bushels.	Oats ...	39 bushels.
Rye ...	22½ „	Potatoes ...	5½ tons.
Barley ...	24 „	Swedes ...	11 „
Rotation hay ...	23 cwt.		

Marked increases in production have been effected since the War, the output having been doubled. It should be pointed out that the average yields are diminished by the inclusion of many areas that are unsuitable for high crop production, especially in the northern half of the country. Finnish farmers, in general, have been quick to seize upon the fact that the establishment of cultivated pastures leads to a marked increase in the grazing capacity of the land. In Finland the increase is from two to four times the normal output.

The livestock statistics for the country are as follows:—

	1936 figures.		1936 figures.
Horses ...	360,061	Goats ...	10,914
Dairy cows ...	1,221,131	Swine ...	421,455
Other cattle ...	557,382	Reindeer ...	87,380
Sheep ...	974,298	Poultry ...	2,626,486
Bee-hives ...	12,711		

The principal changes that have taken place in recent years are a reduction in the horse population, due to little breeding being done during the depression, and in consequence of which horses are now relatively dear, and a marked reduction in the numbers of sheep. The principal increases have taken place in poultry, swine and reindeer.

Wednesday, 1st June.

The first day after reaching Helsinki was spent in the capital. Helsinki is known as the “White City of the North,” not because of its white buildings, but by reason of its light-coloured Finnish granites. It is the largest city in the country with a population of about 300,000. In recent years building developments have given it a modern appearance in spite of its age. Formerly many of the buildings were of wood, and in order to provide reasonable freedom from fires, the main thoroughfares were made very wide. With the growth in the population, many

of the former wooden buildings have been scrapped and in their place blocks of flats and offices, as modern as in any other European city, have taken their place. Granite, which gives an impression of solidity, has been extensively used in the reconstruction of these buildings. Aestheticism has not been overlooked in framing the layout of the modern city, for there are numerous open spaces, with lawns, trees and statues depicting various incidents in the development of Finnish national life. Modern Finnish architecture finds expression in buildings which are strangely plain yet carrying dignity, with straight lines much in evidence. The modern Railway Station, General Post Office, the Parliament Buildings, Stockmann's Departmental Stores, the Michael Agricola Church, the Stadium and the Hospital all illustrate Finnish architecture at its best. The Parliament Building is the pride of the city, with granite exterior and marble interior.

Finland has a one-chamber system of Government; the deputies, numbering 200, are elected by proportional representation. The Government at the moment is National Liberal in character. The sexes share equally in the rights of citizenship, and at the present time there are 14 women members of the Diet. The central chamber of the Parliament Building has been carefully planned, each deputy being able to vote from his desk. Good acoustics have been secured by covering the ceiling with fibre boards and the walls with cloth. Among other notable features in the city were the large number of well-built churches.

The party also had the opportunity of appreciating certain developments in the history of the Finnish people from a visit to the Seurasaari open-air museum. Seurasaari is a popular public park belonging to Helsinki and, in addition to the interest attaching to an old rapid-shooting tar boat and old village settlements and Laplanders' huts, &c., the friendly brown squirrels provided much amusement.

In the afternoon the time was occupied with a visit to Valio's Dairy and the Biochemical Research Institute. It should be explained here that the co-operative movement is firmly established in Finland, and for the sale of dairy produce the co-operative dairies are combined into two central organisations, of which the Co-operative Butter Export Association, Valio, is the chief. It was here that the first acquaintance was made with Professor A. E. Sandelin and his assistant, Mr. Jouko Juuramo, and throughout the tour the greatest help was rendered by these two technical representatives of Valio. As an organisation, Valio has a membership of 549 co-operative dairies out of a total in the country of 682. The statistics of all these dairies show

that 479 make butter, 38 butter and cheese, 29 cheese only and 136 co-operate for the sale of milk. Co-operative dairies dominate the whole of the buttermaking industry in the country and practically the whole of the cheesemaking. Valio at first was interested mainly in the export of butter, but in recent years it has become interested in the internal trade of Finland. Thus, in 1935, it sold 113,551 kegs of butter in Finland and 189,725 kegs abroad, principally to Great Britain and Germany. This quantity represented over 93 per cent. of the total butter exports. Of the individual farmers in Finland, Valio claims 67,000 of these as its members with a total number of cows in milk throughout the year of 500,000. This makes clear one very interesting fact—that the average head of dairy cow stock maintained in Finnish farms is low—actually the average cow population per farm throughout the country is five. Three of Valio's central dairies are situated in Lapland, within the Arctic Circle, and the butter and cheese made there are sent to Helsinki. The total milk production in Finland is estimated to be about 550,000,000 gallons per year, and of these Valio deals with 176,000,000 gallons, or about 33 per cent. of the total milk produced. Only first-class butter is allowed to be exported, the produce of every dairy being graded weekly. Five different classes of first grade are recognised, but England receives the best of these. Valio's butter is sent to Hull, where there is a depot, for sale in the Midlands and Manchester. No butter is sent to London, but some goes to Scotland. Finnish butter commands a slightly lower price than the Danish, but it is supposed to keep better. It is of interest to note that in connection with the manufacture of butter, all water used for washing purposes is sterilised by means of "caporite" (commercial), which is a pure form of calcium hypochlorite, with a content of 70 per cent. active chlorine. Approximately 5 to 10 parts per million are used, but the amount rarely reaches 10 parts with normal waters. After 30 minutes the water is tested with starch and potassium iodide, and if a blue colour is obtained the water is regarded as satisfactory. Brown-coloured water from peaty land is never employed in butter factories, except when absolutely necessary, and in such cases approximately three times the normal quantity of calcium hypochlorite is used. Even then the quality of the butter may be affected by the wash water. All butter churns, workers and wood parts in general are similarly sterilised.

The Valio Central Dairy, in Helsinki, is concerned with the liquid milk trade, ice-cream production and cheesemaking. There are over 500 shops selling milk in Helsinki, but the supplies are obtained from one of three firms that handle the supplies. There is no regularised system of milk delivery to consumers as in England, but customers collect their requirements from the

shops. Milk is a much appreciated article of diet, and the shops handling milk do this as a convenience rather than with the object of making a living out of dealing in milk. The principal income in such cases is made out of selling other commodities.

One interesting feature about the dairying industry in Finland is that the tuberculin test is applied to all cattle in the country every two years. The incidence of tuberculosis in the herds is very low, the reactors numbering 0.2 per cent., but most of the reacting cattle are affected with the human form of the disease rather than the bovine. Reacting cattle are slaughtered. By contrast with the low incidence of tuberculosis in cattle, the disease is fairly common in humans. There is no pasteurisation of the public milk supply, not because the dairy companies do not wish to treat the milk, but by reason of the rooted objection of the milk-consuming public to pasteurised milk. Pasteurisation is adopted, however, for milk to be used for butter production. In general, milk keeps quite satisfactorily, since the extensive education service maintained by the co-operative organisations ensures clean production, while steps are taken on all farms to-day to lay in a store of ice in the spring of each year which lasts through the summer until cold weather returns again. It is customary for the churns to stand on ice, while the milk, on reaching a central dairy, is again cooled to 1 or 2 degrees C. It is sent out to the shops at this temperature, where it is kept as cold as possible and it does not rise above 9 or 10 degrees C. by the afternoon. Of other troubles experienced in home dairy herds, Finland has a little trouble from abortion, but an attempt is now being made to control the disease.

The trade in ice-cream has developed considerably in Finland and a very good quality was available in all restaurants and hotels. Much use is also made of separated milk as a drink, but in this case it is frequently treated with starter and sold in bottles for consumption.

Another dairying activity of Valio, in Helsinki, is the making of Edam cheese. Mr. Stelvagen, a native of Holland, was in charge of this section, and some 40,000 cheeses were in stock at the time of our visit. Another section of the dairy was given over to making processed cheese, chiefly from Emmenthal cheese, and much of this is exported. Professor Sandelin intimated that they were using a combination of 90 per cent. sodium citrate and 10 per cent. sodium phosphate in the course of processing. The use of sodium phosphate in the course of processing had proved to give consumers of processed cheese a feeling of satisfaction from eating a very little of the cheese, whereas normal appetite was restored with the addition of sodium citrate.

The mean selling price of milk in Finland in 1937 was approximately 8d. per gallon in terms of English money. The producer received approximately 6½d. per gallon, so that the difference between the price received by the farmer and the price paid by the consumer only allowed 1½d. per gallon for delivery to the shops. Actually the margin is the smallest of any country in the world. In the case of butter that is exported, a subsidy of from 1d. to 2d. per pound is paid by the Government. In attempting to form some comparison of relative milk values in England and Finland, it is necessary to recognise that the cost of living is cheaper in Finland and a smaller amount of money buys more. Labour, in particular, is cheaper, the wages of dairy girls being about 200 Finnish marks per week, or the equivalent of about 18s. Even at this wage dairy workers are the best paid girls in Helsinki. The milk consumption in the various forms of dairy produce equals about 1½ pints of milk per head of the population daily.

In addition to Valio's activities in the organisation of the marketing of the produce of its members, it also acts in an advisory capacity and engages in fundamental research work both in connection with dairy processes and methods and also in the wider sphere of crop production and animal nutrition. The party was received by Professor A. I. Virtanen at the Biochemical Research Institute, who gave an interesting outline of the work upon which he is engaged. He indicated that milk production was the most important of Finland's agricultural activities, and that research work was being directed towards making Finland self-supporting in the supply of protein-rich foods. To this end legumes were regarded as of supreme importance to Finnish agriculture, and special studies were being made of nitrogen fixation by the root nodules. Arising out of this work the Professor indicated that legumes had been proved to have the capacity for enriching the soil in nitrogen during the process of growth, so that species growing along with legumes obtain a sufficient supply of nitrogen without the need for separate applications of nitrogenous fertilisers. This is specially the case when oats are grown along with peas, and when timothy is grown along with red clover. Finnish soils, however, are not favourable to the growth of red clover or peas unless the seed is inoculated with the appropriate culture prior to seeding, and part of the work of the Biochemical Institute is the preparation of cultures for treating legumes; the present output of cultures is sufficient for 4,000 acres yearly and the trade is developing rapidly.

Professor A. I. Virtanen is already well known to many people in England as the originator of the A.I.V. method of silage making, and this work of fostering good yields of red

clover and timothy is also associated with the extensive use of the A.I.V. method of silage preservation. The use of this method is widespread in Finland after ten years since its introduction, for it was first employed on a farm scale in 1928, and it is estimated that 20,000 Finnish farmers are using it and the number grows every year. The A.I.V. method of silage making is to add acid to the freshly cut green food when put into the silo to prevent it from fermenting or moulding. It was found in Valio's laboratory that, if the acidity of the stored material was raised to a point between pH_3 and pH_4 , deterioration by decomposition was prevented and, in practice, losses in good A.I.V. silage are only from 5-8 per cent. About 14 to 15 quarts of acid solution are used to every 4 cwt. of fodder put into the silo. Seed mixtures of red clover and timothy have become very popular in Finland for silage making and very high yields are obtained. Three cuts of the mixture are taken, so that it will be recognised that a high protein and low fibre content is associated with the stored product. The yields of this crop on Professor Virtanen's own farm average 16 tons per acre per annum, and the quality of the resulting silage is such that when fed to dairy cows the milk produced is of good flavour and colour even in mid-winter. By this system Professor Virtanen claimed that it was possible for Finnish farmers to become practically independent of outside purchases of nitrogenous fertilisers and protein-rich concentrates. Indeed, on his own farm milk is produced from entirely home-grown legumes. Members of the party were impressed with the sincerity of Professor Virtanen's statements and subsequently had ample opportunity to note the frequency of silos, even on relatively small farms, throughout the country. On his own farm, A.I.V. silage accounts for 60 to 80 per cent. of the total fodder units given to the dairy herd, and the hay ration accounting for 5 to 10 per cent. Straw, potatoes and oatmeal comprise the rest of the foods, and the average yield per cow with this treatment is about 800 gallons per annum. The Professor claimed that, in his own herd, dairy cows in full production receive from 80 to 90 lb. of A.I.V. silage daily and that ten cows have had this treatment for the last five years with no ill effects. It should be explained that the significance of the introduction of A.I.V. silage is increased when it is realised that there are only three to four months when cows can go out to graze in Finland, viz., June, July, August and September, and, therefore, a long winter feeding period has to be faced. I was sufficiently impressed with what I saw in Finland in respect of the A.I.V. system to be convinced that its recent trial in England had hardly done justice to it. The Finns are using this system to preserve young grass and legumes, while we in this country are

resorting to grass drying or the use of molasses for the preservation of silage. Incidentally they have tried the molasses method in the laboratory, but do not get such satisfactory results as from the use of acid. In any case, they do not have sufficient home-produced molasses available for use on an extensive scale.

The outstanding facts in relation to the use of the A.I.V. silage in Finland may be summarised as follows:—

1. Its success is proved by the large number of farmers who are placing increased dependence on it.

2. It produces no complications in the process of making and no objections are raised in regard to it.

3. Cattle feeding is being simplified and it has no adverse influence on the health of herds.

4. It gives rise to no taints and improves the colour of milk, while the vitamin content is maintained at a high level throughout the winter.

5. Costs of milk production have been reduced by its use, while the costs of making per food unit are approximately equal to the costs of hay-making per food unit.

Thursday, 2nd June.

The arrangements included a sea trip to Porvoo, a port on the southern coastline. The early part of the sea trip was marred by a fog which settled down suddenly and lasted for an hour or so. The sea was smooth, however, and when the fog cleared away it revealed a coastline dotted with summer houses and bathing huts, with private landing stages leading ashore. All that was seen typified ideal summer resorts. The houses that were seen on this trip were mostly constructed of wood. Red is the popular colour of the paint on these houses—presumably to give a warm tone to the countryside when it is snowbound in winter.

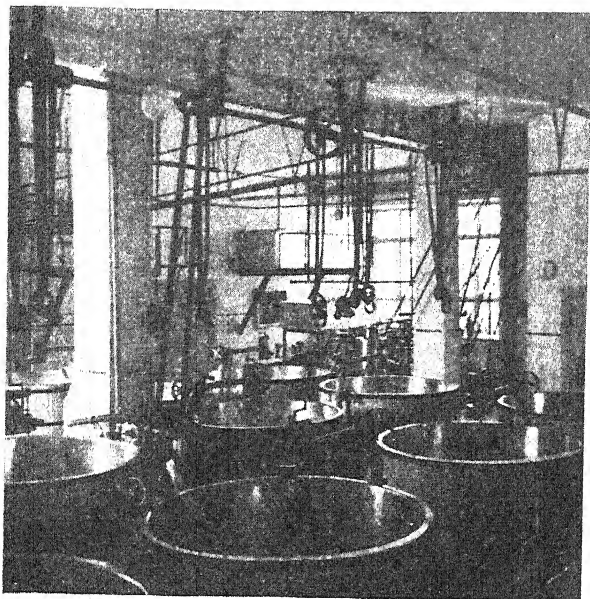
The lunch on board took the best part of two hours, and this included cooked reindeer from Lapland. Professor Sandelin, who accompanied us, brought ice-cream with him for the finishing course, and this was greatly appreciated. Valio ice-cream is made of real cream and natural flavourings, no synthetic materials being employed.

The approach to Porvoo was very pretty, the sides of the river being full of rafts of timber being brought down to the saw and paper mills. Porvoo itself, which was reached about 3 o'clock, is one of Finland's old-world towns, with small wooden houses and narrow streets. At Porvoo we were met by a motor bus and

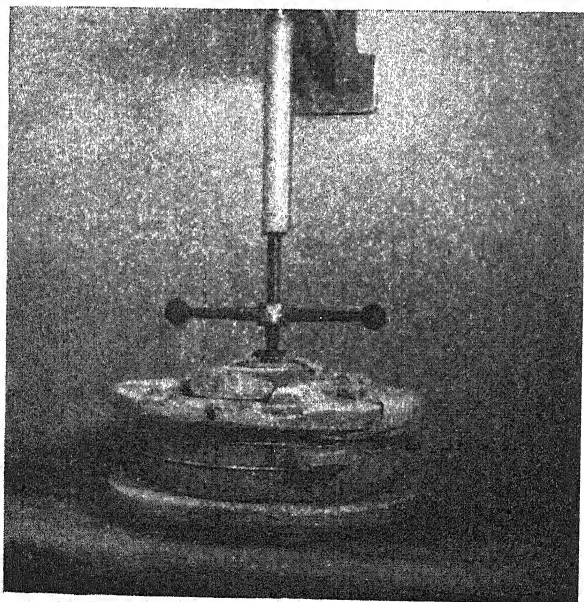
transported to the Koskisto Dairy, which is the largest Emmenthal cheese factory in Europe. This motor journey gave us our first introduction to Finnish roads and real country scenery. The road to Lovisa was reasonably good, but thereafter we had more than enough liver-shaking to last for some time. On the whole, roads were remarkably good. They are mostly formed of packed gravel and here and there modern methods of construction are being employed. The construction and maintenance of the roads prior to 1921 was in the hands of the landowners, but they are now under Government control. The roads are treated with calcium chloride to keep them damp, otherwise the dust nuisance would be unbearable.

The journey was interesting for the fact that we saw at close quarters the intermixture of forestry and agriculture. The marvellous straight timber in the forests at the side of the road were mixed with clearings for agriculture, the ground often being full of huge boulders. Ayrshire cattle were very popular in this district and many herds were seen grazing. Open drains were in evidence everywhere. This suggested that this system of drainage was most suitable for getting the water away rapidly after the snow goes in spring, but actually under-drainage with pipes is recommended, and the Government has sought to popularise this system by granting long term loans for the purpose of under-draining. This serves a double purpose in that it is used as a means of relieving unemployment. In 1929 only 3 per cent. of the total area was under-drained, but much progress has since been made in the best agricultural districts.

At the Koskisto Dairy, we were met by Mr. Rickman, the Chairman of the factory and a very big farmer, and the cheesemaker, Mr. Salminen. An interesting feature of these dairies is that the staff live on a floor above the dairy itself. The interior of the dairy contained the large copper vats in which the cheese is made. Copper is preferred to aluminium as the cheese does not stick to the copper. The vats hold about 245 gallons (1,100 litres) of milk and are kept spotlessly clean, being polished every day. It is an interesting side-light on dairying problems to find that the milk supplied by the farmer-members is paid for on a grade basis, the reductase test being used. After having improved the bacteriological quality of milk, difficulty was experienced at first in producing good Emmenthal cheese, so that it was necessary to develop cultures for use in the cheesemaking process. The cheese is sold at about three months old and all goes for export—some going as far as Mexico, though the best goes to the U.S.A. The individual cheeses are of large size and weigh about $1\frac{1}{2}$ cwts. This cheese is judged by the size of the holes in it, the very best having holes that are about the size of 2s. pieces. Pig-keeping



Interior view of Emmenthal Cheese Factory, Koskisto.



Typical Emmenthal Cheese Press.

was a feature at this factory for the consumption of whey, which, after being separated, is available for pig-feeding. The young pigs here ran outside in large runs, the ground being well-trodden and free from vegetation. The fattening houses were of typical Scandinavian type, and the pens were literally packed with pigs—only enough room being allowed in the pens for them to lie down. Before leaving this dairy we were refreshed by coffee and cakes that were provided for us by the staff.

On the return journey to Helsinki by bus, we dined in Lovisa and also paid a quick visit to a local farmer's co-operative dairy that was not associated with the Valio organisation. This was a new dairy that had only been built about a year. The interests here were of a general character, for both butter and Emmenthal cheese were made. The producers in this case received back supplies of separated milk and whey. The butter milk was cooled off and sold for human consumption, and it was said to be a very popular drink. Bread and cakemaking was another sideline, the produce being sold in the local shops.

We reached Helsinki very late at night and found the beds at the Grand Hotel most comfortable.

Friday, 3rd June.

We left Helsinki by motor bus about 9 a.m. for the Plant-Breeding Station at Tammisto. This is the experimental station of another co-operative society, viz., the Hankkija Co-operative Wholesale Society. The Hankkija Society is the largest business of its kind in Finland, and, apart from the plant-breeding station, it has an agricultural machinery works, nurseries, a flour mill and cattle-food mill. Plant-breeding work has a special significance for a country like Finland, for the summer growing season is restricted to about 75 or 77 days. Not only must the spring-sown grain be early maturing, but that sown in autumn must have the ability to resist the severe weather of winter. The plant-breeding research at Svaloff, in Sweden, had received much attention, and Swedish varieties of oats and barley are grown extensively in Finland.

At the Plant-Breeding Station we were met by the Director, Dr. Otto Valle, whose account of the work was translated into English. The Station has a total area of 175 acres and was established 25 years ago. The work is of an intensive character and some 12,000 separate small plots provide some idea of its variety and complicated character.

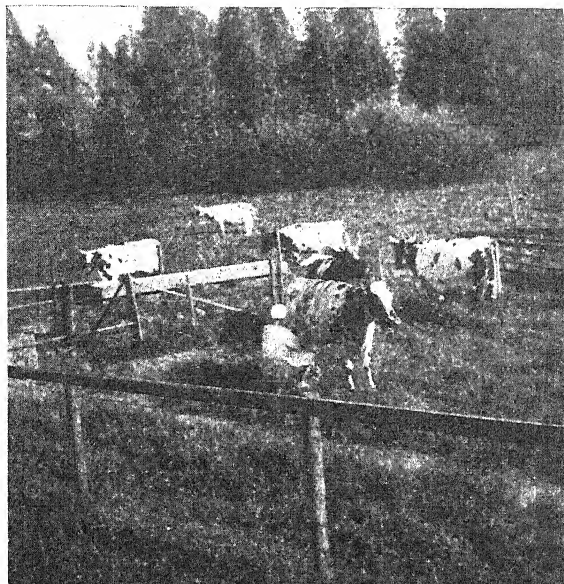
Oats have received special attention because of the importance of this crop. The climate is very suitable and practically 20 per

cent. of the total cultivated acreage in Finland is devoted to oats. More recently wheat has attracted attention, and now about 70 per cent. of the country's needs are met from home production compared with $2\frac{1}{2}$ per cent. before the country gained its independence. Wheat in Finland includes varieties for sowing in spring (May) and autumn (usually August seeding). Winter wheat is grown chiefly in the south-west, which enjoys the most favourable climate and has a clay soil. Late frosts are rare in this district and there is a cultivating season of from 190 to 220 days. Rye bread is eaten throughout Finland, and rye occupies about 10 per cent. of the cultivated area compared with 2 per cent. under wheat. Rye is grown fairly generally over the country and especially in the central and eastern districts, where the growing season extends from 160 to 190 days. Barley is associated with the north of the country where the general agricultural conditions are poor. Apart from the work on cereals, attention is being paid to legumes and grasses; in the case of the latter, leafy strains of native cocksfoot are being raised.

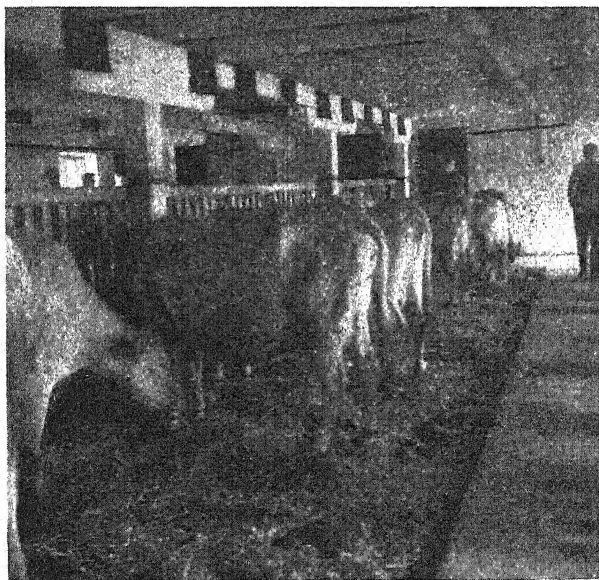
A herd of West Finnish cattle was seen at the Plant-Breeding Station. There are three native breeds of Finnish cattle, the West, East and North Finnish. We did not see any of the two latter breeds on our tour, but the West Finnish type is very widely kept in the southern and western districts. They are mostly light dun in colour, with some darker than others, of a brownish-yellow hue, and one East Anglian member of the party claimed that they were similar to the dun-coloured Suffolk breed that was one of the ancestors of the Red Poll breed. Most of these Finnish cattle were polled, though some showed very short development of horns. No particular significance attaches to fancy points in the eyes of breeders. The main concentration is on milk and butter-fat yields. These cattle are small in size, weighing when mature from 770 to 880 lb. live weight, and for all the cattle recorded of this breed in the country they average just over 600 gallons of milk, with 4 per cent. of butter fat. The records of the herd at the Plant-Breeding Station were as follows:—

1935—6,624 lb.	average	milk	yield	with	4.1	per	cent.	fat.
1936—6,670 lb.	"	"	"	"	4.19	"	"	"
1937—7,117 lb.	"	"	"	"	4.44	"	"	"

The herd kept consists mainly of young cows, and full use is now being made of A.I.V. silage for winter feeding. The extent to which concentrates have been reduced since A.I.V. silage has



Open-air milking of an Ayrshire herd.



Cowshed with West Finnish cows.

been introduced is shown in the following table of the percentage consumption of different foods :—

	A.I.V. Silage.	Concentrates, mostly Linseed.	Pasture Grass.	Oats.	Hay.	Straw.	Roots.	Fresh Grass.
1935	1.0	12.0	19.0	16	22	5.1	16.9	7.7
1936	2.8	8.0	16.0	17	20	4.6	6.3	18.0
1937	17.0	2.0	11.0	18	19	1.9	9.5	20.0

The cattle at this farm were grazing on a wonderful young pasture, and it appeared that alternate husbandry is already appreciated in Finland.

At this centre the land was under-drained. The farm occupies the site of an old lake and the soil was in excellent order. In Finland, generally the soils are very deficient in lime, and frequent applications are necessary.

Amongst other features observed here was the fact that the cows were allowed free-range grazing; in fact, we saw no tethering of cattle in Finland, and this was in marked contrast to what we saw passing through Denmark.

From here we went on to the School for Home Management, in Tuusula. The school provides a training in horticulture and domestic science with a certain amount of agriculture. The Acting-Principal, Miss Aili Ryselin, and most of the staff conversed in very good English and had spent periods for training in England. Some of the students, too, had spent periods in England, learning the language, and others were anxious to go. There were about 50 girls studying horticulture and 30 girls taking the domestic science course, and they are being trained to be teachers in these respective subjects. This school is very modern, having been established as recently as 1928, and is for the Finnish-speaking section of the population. The Government is responsible for financing the activities, and most of the students were from the poorer classes and attend under very favourable terms. Thus the fees for tuition amount to £1 10s. per year, and for board-residence, £2 per month. The training here is very complete, as it involves a four years' course, which includes two years of preliminary training before students come to this school. Our mid-day meal was taken here, and the meal was well worthy of the school.

We went next to the farm of W. Rosenlew & Co., at Harviala, and were met by Mr. and Mrs. and Miss Kristine Rosenlew, and Mr. Boris Schildt, the Manager, and his wife. Harviala is one of the farms on a large estate belonging to a paper and saw mills company, which owns 250,000 acres of forests. Harviala extends to 27,500 acres, of which 1,250 acres are farmed, and was

bought in 1913 mainly for its forests. This is quite typical of Finnish agricultural practice as a whole, for it is closely associated with forestry activities. Timber and its associated industries represent the principal features in Finland's economic life and are responsible for 85 per cent. of the country's exports. Farming is an adjunct to forestry in this country and fits in well with the general scheme. Thus, during the summer the labour engages in agricultural pursuits, and in winter horses and men are engaged in the forests. Harviala is 250 miles inland from the West Coast, and the timber is floated down a stream to Pori.

The farming at Harviala was on a grand scale. The buildings represented the last word, and the barn was the biggest that any member of the party had ever seen and was equipped with every modern need, including grain drying and cleaning equipment. There was a nursery here, too, which covered 150 acres, the biggest in Finland, where plants of all kinds are grown for sale.

The live-stock on this farm were nearly all pedigree. A herd of 80 Large White sows was kept primarily for breeding pigs to be sold for stock purposes. No fattening is done, for all the pigs are sold as stores. Pig-keeping is well supported in the country by reason of the abundance of separated milk and whey, and, as in Denmark, two types are kept, viz., the Finnish lop-eared breed (similar to the Landrace) and the Large White Yorkshire.

The cattle at Harviala were Ayrshires. It seemed strange so see these cattle so far removed from their native country and to find that they are the most popular breed in this part of Finland. The herd was one of the most famous in the country and numbered 265. Actually we saw 160 milking cows, which, during the summer months, are all milked out of doors. Dairy-maids do the milking throughout Finland, and here was an instance where the conditions, so far as size of herd is concerned, were ideal for machine milking. This had been tried, however, but discontinued on the grounds that dairymaids milk better than machines. The herd average in the last milk recording year (1937) was 8,808 lb. of milk of 4.4 per cent. fat from 160 cows.

At this farm the use of proved bulls is part of the breeding policy, and one of the four bulls in use was 12 years old. The whole herd was in excellent condition and all were impressed by the satisfactory type of animal kept. The milk from this farm is sold to a firm in Helsinki and skim milk is received back.

Calves that are not needed for home rearing are sold to other farmers for rearing.

A big horse stock is kept at Harviala. It numbers 50, but this is not enough for all needs, for tractors are employed on the land as well, while, in winter, additional horses have to be hired for timber hauling. The Finnish horses, in general, are a light-legged type, while the Finnish carts are of the very small low-loading type. It was interesting to find that the breeding value of horses in Finland is determined by labour output tests, in which such factors as economy of upkeep, haulage capacity, capacity for rapid movement, and temper are all taken into account. Thus, stallions and mares, before being approved for the stud book, are subjected to two haulage and two trotting tests. The utmost importance is attached to what is known as the "haulage-reliability" test, which in summer is carried out on soft sand and in winter on a hard snow surface covered with sand. The load is varied with the size (weight) and age of the horse, while the trotting test is made by harnessing the horse in a trap containing two passengers and noting the time for a journey of one kilometre. An opinion on the temper is formed by a member of the examining committee as a result of his handling the horse. On the result of these tests the horses are divided into "utility-value" classes, and only those horses which have passed the haulage-reliability test are eligible for the stud book. There is a tendency for two separate lines of breeding to be developed, the one which can be characterised as a sturdy work-horse type, of just over 15 hands height, and the other a lighter-legged type, which is regarded as an all-round animal, also useful for military requirements. There are other qualities which commend these horses, such as their longevity and capacity for subsisting on coarse fodders. The system of feeding is to give 17 to 26 lbs. hay and 4 to 6 lbs. oat straw. The allowance of oats is from 2 to 13 lbs. per day according to the size of farm and the availability of supplementary fodder. On most of the farms the horses are kept in stables upstairs—over the cowshed—the flooring being wood throughout.

We left Harviala impressed with the magnitude and thoroughness of the farming enterprise. We were grateful in addition for a delightful hospitality in the form of English tea. Indeed, on all our afternoon visits to Finnish farms we were entertained to tea before seeing the farms.

We moved our headquarters for the night from the Grand Hotel, Helsinki, to the Kaupungi Hotel, at Hameenlinna. Our party had to split up into two sections, as we all could not be accommodated at the same hotel, but prior to this we had an evening meal at Aulanko, which is a famous beauty spot close by.

Saturday, 4th June.

After breakfast a long motor ride took us to the Higher Dairy School and Dairy Experimental Station at Jokioinen. We were met by Ingeneur Olaf Larkka, the Head of the School, and by Dr. Eino S. Tammisto, the Head of the Research Station. The Experimental Dairy and School was established in 1930, and, next to the University of Helsinki, is the most important training centre in Finland, and is financed by the Government. The object is to train dairy managers, and the course of instruction considered necessary for this purpose covers a five years' period of training, including two years at this Institute, the other three years being spent in commercial dairies, *before* taking the theoretical course. This school is concerned with teaching male students only, and the numbers are restricted to 25. One remarkable thing about education in Finland is the low cost to the students. Thus, at this centre, the entrance fee was the equivalent of 13s. and the board-residence amounted to about 1s. per week. No instruction fee was paid, and the low boarding figures are due to the fact that credit is given to the students for actual work done during the period of training.

The one outstanding feature of the training given in this school was the provision of typical factory equipment for the handling of milk. Indeed, in its equipment, this school included a typical factory lay-out, and one could not help feeling that our efforts at teaching dairying in England are somewhat behind the times. Thus the Finns start their buttermaking instruction on large power churns, which make our own hand equipment in instructional dairies in England look more like toys. Being myself associated with an important dairy training centre I felt that compared with the Finn we are only playing with dairy education, but, on the other hand, the whole spirit of the Finnish people makes one feel that agriculture is not only alive but that it is the vital industry in the country and nothing is neglected to secure the promotion of its well-being.

From Jokioinen we journeyed to Forssa for lunch. In the afternoon we visited the farm of Saaren Kartauo, belonging to Mr. Frenckell, the Mayor of Helsinki, who was away in Paris, but his daughter, Miss Erica ven Frenckell, made a charming hostess and deputy. This estate extends to over 5,000 acres in area, of which 920 acres were cultivated, including about 100 acres of pastures. In addition to this there are about 2,500 acres of lakes on the estate, and Mr. Frenckell's house had a delightful situation overlooking a lake. The estate had interests over a further 4,000 acres of forests.

The chief agricultural interests here centred in the herd of 155 milking cows of two breeds. The first is a herd of Ayrshires,

descended from foundation stock purchased at Harviala, but with direct imports of males from Scotland; the second breed is the only herd of Dutch Groningen cattle in Finland. These animals have nearly an all-black body, with very little white, which is usually on the face. These two breeds are being crossed very successfully, but their performances last year as pure breeds are given below:—

		Ayrshire.	Groningen.
		lbs.	lbs.
Yield of milk	... ..	8,360	8,945
Yield of fat	... ..	352	312
Percentage of fat	... ..	4.2	3.6

It was interesting to note here that considerable dependence is placed on A.I.V. silage in the feeding of this herd. Indeed, Mr. Frenckell is the biggest silage maker in Finland, the quantity made last year being 800 tons, and this quantity was to be increased this year.

In the cowsheds at this farm, chalk was sprinkled on the floors to keep the air pure, while sphagnum moss was used for litter, as also in the stables for bedding down the horses.

A pleasing interlude during the morning should not pass unnoticed, for Mr. John Cotton, the senior member on the tour, was presented with a Finnish knife by Mr. Juuramo on behalf of our Finnish hosts on the occasion of his 75th birthday.

Sunday, 5th June.

We left Hameenlinna on route for Tampere by motor bus, and lunch was taken at the Tourist Hotel of Vehoniemi Ridge, which gave us another delightful view of the blending of lakes and forests. From here we went to inspect the herd of Ayrshire cattle and enjoy the hospitality of Mr. Elving, at Kulja, near Tampere. The house, which was thrown open for the party to inspect, as indeed were all the houses visited, is a beautiful wooden building, erected in 1775. In this, as in other important houses that we visited, elaborate glass chandeliers were very popular. This estate extends to 2,600 acres, of which 300 are under cultivation, the rest being woodland. The farm land is cropped on a seven-course rotation, viz., 1, fallow; 2, winter wheat or rye; 3, spring wheat; 4, spring wheat or barley; 5, seeds for hay; 6, hay; 7, hay.

Two-thirds of the arable land on this farm is under-drained with pipes at an average depth of two to three feet. Mr. Elving, who spoke English fluently, is also interested in horticulture and

had a complete range of glass houses, including a vinery, which is rare in Finland. He is also growing vegetables on a fairly large scale, which is not customary in the country, as the Finns, in general, do not place much reliance upon vegetables for home consumption.

The main agricultural interests at Kulja centred in the excellent herd of Ayrshire cattle that were imported from Scotland a few years ago. Formerly Mr. Elving kept Red Danish, and in view of what has been written about Red Danish cattle at the recent Danish Exhibition, in Copenhagen, it is not without interest to mention that Mr. Elving only has one specimen left, but she is a good one, and a 2,000 gallon cow as well. The 45 Ayrshire cows in this herd averaged 10,560 lb. of milk of 4.3 per cent. butter fat last year, and it was the best herd of its kind that we saw. As at Harviala the milking took place outside, but in this case the dairy maids, with their pails and churns, were transported to the herd about a mile distant from the home-stead in a rubber-tired vehicle. The churns contained water which was used for washing the udders of the cows prior to milking. A small enclosure was provided in a corner of the field into which the cows are driven for milking. Normally the cows stand quietly without being tied up, the washing cloth for the udder being placed across the loins of the cow after use. Open pails were used for milking. In this herd, too, the use of the proven sire is recognised, and one of the stock bulls was over ten years old. A.I.V. silage is highly thought of also on this farm, and about 120 tons of it are made annually. The summer feeding of the dairy cows is mainly on grass, but it was very good grass.

We spent the night at the Hotel Tammer, in Tampere, which was both modern and comfortable.

Monday, 6th June.

The morning was spent in a sight-seeing tour of the town of Tampere and the suburbs. Known as Finland's Manchester, this is the manufacturing centre of the country, and its modern lay-out of buildings indicated the progressive character of those who lead its business affairs. The biggest factory was founded in 1820 by a Scotsman called Finlayson, and it still bears his name. Weaving is the largest industry, then follow, in order of importance, shoes, ironworks and papermaking. Part of the secret of Tampere's progress is the presence of cheap electricity and the extensive use that is made of it for the industrial purposes. This fact accounts for the remarkable cleanness of the city, but here again the chimneys attached to manufacturing buildings were notable for their great height.

Lunch was taken in Rosendahl's open-air restaurant which overlooked delightful lake scenery. Prior to this, however, we had the opportunity of a view from the tower on the Pyynikki ridge. No opportunity has been lost in Finland to take advantage of building these view towers on suitable sites.

In the afternoon a trip was made by steamer on the Pyhajarvi Lake. This proved to be one further repetition of delightful lake-side scenery, with the contrasts of grazing land coming down to the water's edge, and forests in the background. Our impressions generally of Tampere and its surroundings were of the happiest.

Tuesday, 7th June.

The morning was spent in a visit to a typical Finnish farm, in the hands of one who was wholly dependent upon the land for his livelihood. This belonged to Mr. Heikki Karinaa, of Teisko, Kammenniemi, who is a veteran of the war for independence, and the whole family are members of the Civic Guard organisation, which is the volunteer counterpart of Finland's conscript forces. Mrs. Karinaa, too, is a member of the women's volunteer organisation, possessing her own rifle. A gun is a sacred weapon to a true Finnish farmer, to be used in defence of his country.

The farm is 475 acres in area, of which 107 are cultivated, the remainder being forest land. This farm has been in Mr. Karinaa's family for 12 generations, tracing back to 1640, and the whole lay-out of the place was typical of a holding where pride of ownership is evident in all directions. The buildings and house were modern, in fact they had been modernised as a result of a fire which burnt the homestead in 1932. The new house is a very comfortable dwelling which cost about £1,000. It is centrally heated, and has an inbuilt Finnish bath-room. The whole structure is of wood, and the roof of shingles. The interior is very comfortable and made doubly attractive by home-made furniture and home-spun cloths. The workshop is a special room on the ground floor of the house, and another special room is given up to the bakery. In the old house they used to bake only twice a year, but now baking is done once monthly. Rye biscuits are principally baked.

The cowshed is modern with a barn and stable over. The interior of the cowshed was interesting from the fact that though the floor is of concrete, the standings were covered with wooden boards, which are creosoted every year. There was a rack in front of the cows which had an opening, controllable by a lever from the end, so that the cows could gain access to the troughs

which were beyond the rack. The cows here were of the West Finnish breed, a herd of 20 being kept. Their average production last year was 9,900 lb. milk, 440 lb. butter, or 4.4 per cent. butter fat. Milking here, as elsewhere throughout the country, is done by dairy maids. A portion of the cowshed was reserved for sheep, and this was the only farm where we came into close contact with sheep, a very small flock of the Finnish native type being kept. These are a white-faced hornless breed, which clip about 4½ lb. wool of reasonable fineness, but their chief feature is their high fecundity. Four silver foxes, too, are kept on this farm, and at the time of our visit there were ten young foxes. Silver fox breeding is becoming very popular with Finnish farmers, but a good knowledge of sound management is necessary if success is to be realised.

Additional features on this farm include the laying of under drains, about ten acres having been completed, and a drainage plan has been prepared for the whole farm. Mr. Karinaa also has won a prize for the best forest in his district, and his son is a graduate in silviculture.

We returned to Helsinki from Tampere by train in the afternoon and that evening we had an informal dinner at the Grand Hotel, which was made the occasion for expressing our thanks to Professor Sandelin, Mr. Juuramo and Mr. Pepenin, the last named having been our interpreter throughout the tour.

We left Helsinki on the afternoon of Wednesday, 8th June, after having spent a morning shopping. Professor Sandelin and his colleagues showed their thoughtfulness for us in handing out roses to the ladies of the party and also provided us with a store of ice-cream to eat on the train. Our route on the return journey was similar to the outward journey, but the times were reversed, and thus we got a new view of the countries through which we passed. We left Finland very well satisfied with the tour and the great hospitality that had been extended to us.

DAIRYING IN THE SOUTH-WEST OF SCOTLAND.

BY JAMES COCHRANE, N.D.A.

Since the beginning of the present century there have been great developments in the science and practice of agriculture, and dairying has probably made greater forward strides than any other branch of this industry. In this advancement the South-West of Scotland has played no unimportant part.

For the purposes of this review, the area taken may be roughly considered as that part of Scotland lying to the west of the River Clyde flowing northwards to the Firth of Clyde and the River Annan flowing southwards to the Solway. It comprises the counties of Ayr, Bute, Dumfries, Kirkcudbright, Lanark, Renfrew and Wigtown and embraces a wide variety of soils and conditions. It must not be taken that this area is entirely devoted to dairying; much of the land is wholly unsuitable for any other purpose than sheep farming.

In revenue, pride of place in Scotland is taken by beef and veal with an annual value of rather over £10,000,000, and milk and milk products take second place with fully £9,000,000. Of the 7,932 producers registered under the Scottish Milk Marketing Board, 5,353 are located in the South-West; it will thus be readily understood that dairying constitutes the major occupation in the South-West of Scotland. This dominating position may, in part, be due to the location of Glasgow and the other industrial towns on Clydeside within the area. These towns, along with the many health resorts on the Firth of Clyde, provide a good outlet for milk. Two other factors in climate and soil are, however, worthy of consideration.

CLIMATE AND SOIL.

The annual rainfall in the South-West of Scotland is high, some districts having as much as 50 inches, while in no part is the rainfall less than 30 inches. As this rainfall is fairly uniformly distributed throughout the year it makes cereal growing somewhat hazardous; much of the grain crop this year (1938) was still to be secured at the end of October. While it is generally conceded that not for over 30 years have the weather conditions of this area been quite so unfavourable, the fact remains that harvest operations are regularly accomplished under greater difficulties than in more favoured districts where the rainfall is normally less in total and where the autumn is almost always dry.

The South-West, as has been already observed, embraces a very wide variety of soils. Much of the land in Wigtownshire and Ayrshire is of a very heavy nature, while again large parts of the area are light and of a gravelly nature. On the upper lands there are large areas of soils of a peaty nature. As dairying is so widely practised, and as almost all the crops are for consumption on the farms, it follows that while the soil limits, to a great extent, the nature of the rotation followed, the actual crops grown are determined by the needs of the dairy farm.

On the lighter lands, the typical rotation is oats (after an indefinite number of years' ley), swedes, oats, ryegrass and clover hay, followed by grass for a varying number of years. This rotation is in favour under practically all conditions where green cropping can be carried on. At the other extreme we find a rotation where two cereal crops are taken in succession and the land seeded down with the second oat crop; this rotation is practised on the heavier soils in some districts of Ayrshire and, in fact, from these soils comes the bulk of the Ayrshire-grown Perennial Rye-grass seed.

In the county of Wigtown we find a modification of the first rotation in that no hay is taken and that the "seeds" are grazed in the first year. This complexity of rotations leads to wide variations in the maintenance rations fed to the cows. In Wigtownshire, where winter milk production is not widely practised, the cows in winter are still largely fed on turnips and straw, while in parts of central Ayrshire the maintenance ration is entirely hay and, strange as it may seem, this system has been practised for generations before the advent of the "no roots" theorists.

CROPPING.

Due to the post-War depression some shrinkage has taken place in the land under cultivation in the South-West. The lower returns from the sale of surplus cereals and the increased cost of labour for the green crop caused the farmer to reduce, as far as possible, his production in both these lines. The method adopted was generally to pursue the same rotation but to increase the number of years under grass.

One other significant feature, however, has been the gradual increase in the acreage devoted to kale, particularly of the marrow-stem variety. The present position is that few dairy farmers in this region have not at least an acre or two of their green crop in the form of marrow-stem kale. The feeding of this crop commences about September and is finished

by Christmas, the kale being carted to the pasture field and spread thereon for the cows to eat.

On dairying farms, apart from local influence exerted by a close proximity to a market, milk and livestock form almost the entire sources of income. Each farm may sell a small amount of grain, a little hay and some potatoes, but one is safe to conclude that these sales do not form more than 20 per cent. of the income of a typical South-West farm.

DAIRY CATTLE.

As dairying is predominantly the feature of the South-West, in consequence the cows are all of a dairy breed. In no other district in Great Britain do we find one breed so much in predominance. While there are a few registered herds of British Friesians, notably in the county of Renfrew, the Ayrshire holds sway entirely in every other part; the proportion of other breeds is negligible.

Formerly there was some crossing with the Shorthorn, this cross being much in demand for town dairies, but nowadays this cross has almost ceased to exist. As a dairy breed the Ayrshire has come to the forefront in a very marked manner in the last decade, due, in the main, to two factors. The breed, which, as its names implies, originated in the county of Ayr and has been maintained as a pure breed for well over 100 years, is exceptionally hardy and is capable of high milk production under very inferior conditions. It might almost be said that Scotchmen generally do not value sufficiently the merits of the Ayrshire cow and the part she has played in the development of dairying in the South-West of Scotland.

The second factor is the relative freedom of this breed from disease. In this connection the export trade has had a marked influence on the improvement of the breed. About the end of the nineteenth century a large export trade was enjoyed by the Ayrshire breed, principally to Sweden, Finland, U.S.A. and Canada, and as buyers from these countries insisted that their purchases should pass the tuberculin test, the more progressive breeders endeavoured to meet the requirements of their clients.

In the initial importations the buyers found that cases arose where the animals passed the test in this country but on subsequent retest in their new homes were found to react. This led to the importing countries instructing their agents that no purchases were to be made from herds where a large proportion of reactors were found to exist. To this restriction on the export of cattle may be attributed the first movement towards the foundation of herds of Ayrshire cattle free from tuberculosis.

It is worthy of recording that in 1896 the herd at Auchebrair, Mauchline, belonging to the late Robert Wallace, when subjected to the tuberculin test, had no reacting animals, and this would appear to be the first herd where the tuberculin test was applied to all the cattle on the farm. The breeders in central Ayrshire were at this particular time specially fortunate in their veterinary surgeon, the late Mr. Thomas A. Douglas, who was practising as a private practitioner in the district around Kilmarnock. This gentleman did much to promote amongst the farmers faith in the efficiency of the new test, and it may well be said that his work, ably supported by that of his son, Mr. A. Douglas*, who later assisted him, helped to put Ayrshire in the forefront in the establishment of tubercle-free herds.

As the export trade expanded, more and more herds became free from tuberculosis, and the passing of the Milk and Dairies Act, in 1914, gave a further fillip to the progress already made. The position to-day is one of which they can well be proud. The county of Ayr has rather more than a third of its herds free from tuberculosis, and some of the districts are already being considered for the establishment of free areas.

In the parish of Mauchline, fully three-quarters of the herds are on the Attested Register, while in the adjoining parishes more than half of the herds have attained this standard. In the establishment of tubercle-free herds the county of Ayrshire leads the other counties of the South-West, but these counties are steadily making progress, and of the 5,353 registered producers located in this area over 1,030 have either Attested or Supervised herds.

Throughout the whole of the area there are practically no flying stocks; the herds are self contained and all the animals required for replacement are bred in the herd. On these farms all the heifer calves are reared. The replacement of the wastage in the dairy herd is met from these, and normally a surplus is available for sale, principally as calving heifers. This has lately become a very lucrative side-line by reason of the great increase in demand for tubercle-free stock.

A very significant change has taken place in the outlet for this class of stock; for many years, prior to the War, the principal market was for export abroad. Now we find that the principal market for Ayrshire cattle is that south of the Border. England has not yet become the outlet for outstanding animals at high prices, but it is the market for large numbers of a very good class and the influence of this market is very pronounced. Calving heifers under 3 years old are now selling freely at prices around 40 guineas each. Demand has increased to such an extent that special train loads of stock leave some railway

* Now Superintending Inspector, Ministry of Agriculture and Fisheries, South-West of Scotland Area.

stations in Ayrshire and other counties of the South-West at least weekly.

It may be of interest if we, for a minute, consider the rearing of these heifers. The bulk of the heifers reared are born between the months of October and March. It is safe to say that all of these calves are given whole milk for at least the first month of their life and generally for a considerably longer period than this. They are almost without exception pail fed, suckling being almost unknown. From about a month of age the calves generally get some meal supplement and a little hay, and the older calves probably get a few swedes. Most of them are weaned from milk when they have had between 80 to 100 gallons. In the late spring the calves are turned out to pasture, and it may be that the younger-born calves are still given milk to drink for a considerable time after they are out at grass.

A field of young grass is preferred, but the small field next the steading has a lot of attractions. On the more sheltered farms, particularly in Kirkcudbrightshire and Dumfriesshire, and where the land is not too heavy, these animals are not again housed until they come in as calving heifers. Out-wintering is not, however, regarded as the means of cheapening the cost of production; out-wintered cattle require to be as well done as if they were housed if the best results are to be obtained. They are usually given a daily supply of fodder and an allowance of concentrates throughout the entire wintering period, and while no saving of food has been effected the cattle are hardier, they thrive better during the summer and are more healthy. They are usually brought in to calve about $2\frac{1}{2}$ years of age, but many well-grown heifers are served to calve at a little over 2 years of age.

There has for the past 40 years been a steady increase in carrying capacity on the farms, and with the present improved outlet for milk, there is a tendency to increase considerably the cow stocks; on many farms we find that the cow stock is twice as much as it was at the end of the nineteenth century. This improvement in the carrying capacity has been effected mainly by improved yields of crops and by increased grass production.

Throughout the South-West, herds are of relatively small size and the most common number is between 30 and 40 cows per farm. This applies, in particular, to Ayrshire, Renfrewshire and Lanarkshire, while in Galloway larger herds are numerous and stocks under 60 cows are the exception rather than the rule.

The herd in Ayrshire has always been worked mainly by the farmer and his family, both the farmer and his wife taking an active share in the labour of the farm. On this family type

of farm, we find that the cleaning and care of the utensils is part of the work of the wife and daughters and that, if there is a large family, they also perform the work associated with the dairy herd, carrying out the cleaning, feeding, milking and sometimes even the general management. This type of farm is common in Renfrew, Lanark, Ayrshire and Dumfriesshire and, to a lesser extent, in the larger herds in Wigtownshire and Kirkcudbrightshire. Under such conditions we do not find much tendency to adopt mechanical methods of milking, but in the larger herds in Wigtownshire there has been a progressive increase in the number of herds machine milked.

A survey taken by the late Dr. McCandlish, in 1934, showed that there was some slight increase in mechanical milking in the South-West in comparison with a survey taken in 1929, but the advent of wages boards and a steadily increasing scarcity of labour has given an impetus to mechanical milking and the installation of machines is now becoming much more common. The survey in 1934 showed that 26 per cent. of the milk-recorded herds in Dumfries, Kirkcudbright and Wigtown were milked by machines, whereas in Ayrshire only 7 per cent. of milk-recorded herds were machine milked.

MILK RECORDING.

In 1903, on the initiative of the late John Speir, of Newton, the Highland and Agricultural Society of Scotland set aside a sum of £200 to inaugurate a scheme of milk recording, and arrangements were made to carry out the work. A detailed schedule was drawn out by the Highland Society Directorate and provision was made whereby the Highland Society provided the local societies or committees at half cost with appliances for weighing and testing the composition of the milk; the appliances to remain the property of the local society. The Highland Society also undertook to contribute two-thirds of the salary of the recorder, provided that the local society defrayed the remaining portion of the salary and all travelling and other necessary local expenses.

Thus, briefly, was set afoot a scheme which has done much to influence milk production and, in 1903, recording was carried out in 34 herds comprising 1,342 cows, societies being formed in Ayrshire, Dumfriesshire and Wigtownshire. Recording was only carried out for six months (May to November) during the first year, and the best yield was that given by a cow in the herd of Mr. William Sloan, Shawsmuir, Dumfriesshire. Her milk record for the 6 months was 731 gallons at 4.02 per cent. butterfat.

As we have travelled far since those days in the production of high milk yields, it may be of more than passing interest to quote from a review of the 1903 records made by Speir:

“ While in a general way the yield of one herd may be compared with that of some other herd, it is undesirable that too much reliance should be placed on such a comparison. In each of the districts some of the farms are situated at a much lower altitude than others, and some are in early and rich districts while others are in poor and late parts, so that uniformity of results could not be looked for. The object sought for, and the main aim of the scheme, was to obtain a means of comparing cows of the same herd, calving at or near the same time, going on the same pasture, and subjected to the same climatic conditions, rather than comparing one herd with another. The latter is quite a legitimate subject of inquiry if the conditions are alike or nearly so, but not otherwise. In the higher and poorer districts, a larger number of acres of grazing is allowed for each animal than on the lower and richer farms, and while this undoubtedly to some extent equalises the yield of cows under circumstances widely different, where comparisons are made between farm and farm, the position of each should be fully taken into account.”

The writer may be excused if he questions whether the views of many to-day who aim at super milk records are as sound as those expressed over 30 years ago.

In 1904 only one society continued its operations and only 12 herds were tested, but in 1906, progress was made when four more local societies were formed and 76 herds, embracing 2,688 cows, were recorded.

In 1907 the administration of recording was handed over to the Ayrshire Milk Records Committee, and the formation of this body helped materially to popularise the new movement with the farming community.

In 1911 the Highland and Agricultural Society discontinued their annual grant of £200, but new sources of revenue were obtained in grants from the Ayrshire Cattle Herd Book Society and the Development Commissioners.

In view of the fact that it was recognised that official milk recording in Scotland was confined to one breed, and that all dairy cattle in Scotland should be milk recorded if their owners so desired, the name of the administrative body was adjusted to Scottish Milk Records Association, and representation on the Council of the Association was widened to include delegates from all local societies, breed societies and Educational Institutions in Scotland.

In 1913, ten years after the start of the scheme, the progress made had been truly remarkable. In that year, 32 local societies were conducting full-year recording; the number of herds had increased to 581 and the number of cows recorded was 22,816.

The method of recording in vogue to-day is virtually the same in principle as that employed at the commencement of the scheme. The work is carried out entirely by trained recorders, who, prior to appointment by a local society, undergo special training at the West of Scotland Agricultural College in weighing, sampling and butterfat testing. The recorder visits the farm at intervals not exceeding 28 days—many breeders object to intervals of more than 21 days—weighs the evening's and morning's milk of all cows in milk in the herd and tests a composite sample of the two milkings of each cow by the Gerber method for determining butterfat.

While grants in aid from State and other sources meet the central administrative costs and expense of record books, the salary and travelling expenses of the recorders are defrayed by the local society. The local society levy the cost of the year's operations on their members; in some cases on a uniform basis per member and in others by a charge dependent on the number of cows recorded for the individual concerned. As most local societies provide the recorder with a pony and trap for conveyance of himself and appliances from farm to farm, and as the members themselves are responsible for the board and lodging of the recorder on the occasion of his visit, the actual cash outlay is not large, and the average cost per cow may be taken as around 3s. per head.

The table given in 10-year periods illustrates the progress which has been made in milk recording in Scotland since the inception of the movement.

Year.	No. of Local Societies.	No. of Herds.	No. of Cows Milk Recorded.
1903	3	34	1,342
1913	32	381	22,816
1923	40	703	26,952
1933	39	745	32,456
1937	43	835	37,549

A point of interest is that of the numbers given for the year 1937—the 1938 numbers are not yet available—603 herds, comprising 28,236 cows, belonged to the South-West area.

Since the War ended progress in numbers of recorded herds has not been spectacular, and while Scotland, taken on a percentage basis, has a much higher percentage of cows recorded than her rich neighbour in the South, there is little cause for self-congratulation when to-day only 10 per cent. of the herds, embracing, however, 20 per cent. of the cows, are officially recorded.

The writer is of the opinion that the elimination of the poor cow will greatly benefit the individual farmer and the industry generally, and that until the uneconomic producers are withdrawn from the herd, efficiency in milk production is unobtainable. No suggestion is made or intended that high milk yields are economic—the greater probability is that they are exactly the reverse—but in this utilitarian world there is no excuse for keeping alive the cow that does not produce sufficient milk annually to pay for her keep and, in addition, make some contribution towards a reasonable return for her owner. It is this aspect of the case which makes the apathy of the majority of dairy farmers towards the movement quite inexplicable.

Is it that the average farmer, believing that the aim and object of the scheme is the production of high milk records, simply refuses to be gulled by the high yields given by individual cows receiving and requiring an inordinate amount of care and attention, or is it that the farmer considers he can himself estimate the capabilities of his cows? If this apathy is fostered by the first hypothesis it may well be that the farmer should be excused, as the aim nowadays seems far removed from that which actuated the late John Speir when he initiated the movement in 1903. If the latter supposition is the true reason, a huge percentage of dairy farmers should not be in business. Perhaps, however, the true reason is that for many years after the War, milk production was a somewhat hazardous affair—largely dependent on an unstable market—and many farmers, particularly in Galloway, were receiving for their produce prices which were simply ruinous; milk produced under winter conditions was sold at less than 4d. per gallon, and it is quite feasible that under conditions such as these, the farmer thought milk recording was a luxury which he could not afford. That this is an erroneous view is beside the point, but that milk recording makes a very practical contribution to economic dairy farming can be seen in the undernoted table, extracted from the Annual Reports published by the Scottish Milk Records Association.

Year.	Total No. of Cows Recorded.	Percentage of Cows in Class 1.	Percentage of Cows in Class 3.
1910	9,514	25	11
1917	19,564	50	4 $\frac{3}{4}$
1927	29,459	65 $\frac{3}{4}$	2 $\frac{3}{4}$
1937	37,549	62 $\frac{1}{2}$	3 $\frac{1}{2}$

Thus, in 1937, we find that over 60 per cent. of the cows recorded gave a milk yield at least equivalent to 800 gallons at 3·5 per cent. butterfat for a cow and 640 gallons at the same fat percentage in the case of heifers; while in 1910, with only a quarter of the number of cows, only 25 per cent. were eligible for classification in Class 1. This is progress which everyone can regard as being on the right lines.

The scheme, administered by the Scottish Milk Records Association, is a most admirable one and, taking as it does both milk and butterfat into consideration, it renders a distinct service to the farmer. It was unfortunate that the scheme, formulated in England and adopted there, did not conform with the Scottish scheme.

Many of the progressive farmers in England wish to have the English scheme modified to come into line with the Scottish, but whether or not the dominant partner can be prevailed on to allow "the tail to wag the dog" remains as yet undecided. There is, nevertheless, urgent need for tremendous expansion of the scheme in Scotland.

BUILDINGS.

The more rigorous climate of Scotland has generally tended to cause the provision of substantial buildings for housing the stock, and as dairying is not a new business in the South-West—the number of dairy farms has not increased to any extent owing to depression in post-War periods in other branches of agriculture—the buildings of the dairy farms are very substantial. Further, due to an enthusiastic, if at times somewhat misguided, force of public officials, the housing accommodation has for long been relatively good in the South-West; in particular, the counties of Lanark, Ayr and Dumfries have been well equipped with excellent cow-houses, adequately lighted and ventilated and provided with impervious floors. One significant feature, common throughout the area, is the almost entire absence of feeding passages in the cow-houses.

The cow-house favoured by the dairy farmers of the South-West has the cows facing the outside walls and the troughs almost directly against the outer walls, an individual fireclay trough for each cow being regarded as essential. The travises are of concrete and the cows are held with chains.

The installation of cow-houses fitted with tubular stanchions has not been favoured, in part possibly due to the extra cost involved, but mainly on account of undesirable features in this type of stall. Water bowls are fitted in practically every cow-house in the South-West; where they are not fitted, the cause is usually an inefficient water supply to the farm, but, as dairy farming under conditions of limited water supply is rather frowned on by the Public Health Authorities, and as there is no real shortage of water within the area, this type of dairy farm is not prevalent.

OTHER LIVE STOCK.

It has been already indicated that while dairying was by far the major occupation of the South-West, there were very large areas which were unsuitable for dairy cattle and, as some indication of this, it may be cited that the seven counties carry a sheep stock of over 1,750,000, or approximately 25 per cent. of the sheep stock of Scotland.

During the past two decades there has been a marked increase in the pig population in Scotland, but in this increase the dairying counties of the South-West have not taken their full share.

In 1917, the county of Aberdeen had 8,758 pigs at the June census; in 1937 there were 30,064 at the same date. In 1917, Wigtownshire had a pig population of 16,255, but the numbers for 1937 had only risen to 17,274.

In the years prior to the War, the county of Wigtown took the premier position amongst the counties of Scotland in numbers of pigs, but the present position is that the county of Aberdeen is easily first, followed by Midlothian with about two-thirds of the Aberdeenshire total and Wigtownshire in third place.

In 1917 the pig population of the seven South-West counties was almost 45 per cent. of the total for the country, but in 1937 the percentage for this area has fallen to 36 per cent. Two factors have been, in the main, responsible for this decreased percentage. The first factor is the change in the system of dairying. The change over from cheesemaking on the farm to milk-selling has led many farmers who were accustomed to keep pigs for the consumption of whey to discontinue pig-keeping entirely. The second factor which has militated against

the normal increase in pig-keeping has been the establishment of the tubercle-free herds of cattle. Owners of free herds of cattle are naturally unwilling to expose their cattle to any danger of reinfection, and the pigs have, in many instances, been banished from the farms. While it is neither suggested that the pig is a common source of tuberculous infection nor that a free herd of pigs is difficult to maintain, it is probable that where lack of buildings leads to congestion, it is advisable that only cattle should be kept in the available buildings.

It can also be stated that the system whereby the cowman was, in addition to his duties as cowman, responsible for the care and management of the pigs, has little to recommend it from a hygienic standpoint.

EDUCATION AND RESEARCH.

In any review of the South-West of Scotland, the part played by the farmers of the area in developing agricultural education merits consideration.

As a result of an improvement in quality, Cheddar cheese from Canada began about 1880 to displace Scottish Cheddar cheese on the London market. This led to the formation of the Scottish Dairy Association, and in 1884 this Association brought an expert named Harris over from Canada to teach the American system of Cheddar cheesemaking. A year later Harris was succeeded by R. J. Drummond.

The two instructors gave short courses of instruction at selected farms in the South-West and these courses came to be known as "Dairy Schools." Several years later the Association decided to establish a permanent centre, and this was located at Holmes Farm, Kilmarnock, and became known as the Dairy School for Scotland.

At first accommodation was found in a renovated portion of the farm steading, but after the Dairy School was (in 1899) merged with the newly formed West of Scotland Agricultural College a new building was erected in 1904 on an adjoining site.

The development of the town of Kilmarnock caused encroachment on the land rented to the College, and in 1927 the estate of Auchincruive, near Ayr, was gifted by Mr. J. M. Hannah, of Girvan Mains, for use as a centre for agricultural education and research.

In 1931 migration of the whole of the activities of the College at Kilmarnock to the new centre was effected. At Auchincruive there had been erected substantial buildings for all departments and included a most modern dairy school, with up-to-date equipment, as well as a well-planned poultry department and a new

farm steading. On an adjoining farm housing was provided for the new research institute—afterwards to become associated with the name of the donor and to be known as “The Hannah Dairy Research Institute.”

The building programme undertaken by the College to provide adequate housing at Auchinervie and additional necessary accommodation for the central College in Glasgow entailed an expenditure in round figures of £150,000. Towards this, State assistance on the basis of pound for pound was promised, and it says much for the South-West that, with the exception of about £5,000, the local contribution has now been secured.

MODERN MILK MARKETING.

In the post-War period, difficulties were steadily increasing in regard to finding an outlet for milk at a remunerative price. The problem was further complicated by transport steadily becoming more efficient. In an effort to get over the obstacle of disorganised marketing, the dairy farmers in the South-West formed, on a voluntary basis, the Scottish Milk Agency. The Agency was intended to take over and organise the marketing of milk throughout the area. It was a new movement, somewhat novel in co-operative efforts amongst farmers, and did not attract all producers into its membership. It could not survive on a voluntary basis against the ever-rising sea of difficulties facing the producers, but it paved the way for the next step, that of organised marketing, by legislation.

The Agricultural Marketing Act, 1931, made possible the formation of Marketing Boards and, following a vote of the producers, the Scottish Milk Marketing Board took over, as from December, 1933, the marketing of all milk produced for sale in the area stretching south from the Grampians to the Solway and the Border.

At first the operations of the new Board were roundly condemned and anathematised, but it is an accepted fact that to-day organised marketing has prevented a recurrence, so far as the dairy farmers of this area are concerned, of a depression more acute than that of 1931.

The operations of the Scottish Milk Marketing Board appear, however, to be the cause of one regrettable feature of the present day. The numbers of farm cheesemakers in this area is waning in a very marked degree. In Ayrshire less than 10 per cent. of those who 15 years ago made cheese throughout the summer months continue to do so, and even in the more remote districts the decrease is quite a great. It is probably unfair to lay the entire responsibility for this change on the present milk

marketing system. Improved transport, increasing difficulties in labour, and the very understandable desire of the farmer for a more leisured existence, are all factors which cannot be overlooked, but the high-class, well-made farm-house cheese is an article untouched by competition and for which there is a ready sale even on a glutted market.

Since the advent of the Marketing Board in England there has been to some extent there an increase in farm cheesemaking, and it does not appear as if it should be beyond the power of the sister Board in Scotland to induce a revival of cheesemaking within its area.

Open-air dairying has not so far found many supporters in the South-West of Scotland. Soil and climate are factors which operate rather severely in this area, but the system has been shown to work successfully in the drier, but otherwise equally rigorous, district of Fife, and two herds in the South-West have recently adopted this system. Whether or not progress along these lines will be the development of the future will be largely dependent on the measure of success attained by these pioneers. It may, however, be said that if this is the way along which progress lies, the farmer of the South-West of Scotland will not lag behind.

THE PREPARATION OF DAIRY BY-PRODUCTS.

BY PROFESSOR E. CAPSTICK, M.C., M.Sc., N.D.A., N.D.D.

When butter and cheesemaking were primarily and almost entirely farmhouse industries, the skimmed or separated milk and whey were easily utilised by the calves, pigs and poultry kept on the farm. So valuable indeed were these by-products that many stock-raising farms continued to make butter for some time after the liquid milk market was opened to them, and it is a well-known adage that "the pigs paid for the cheese" in a year when cheese prices ruled low.

With the introduction of the creamery system, which in Britain began in the 1880's, the problem of disposing of the by-products from butter and cheesemaking first appeared. In the closing years of the last century, the creameries were small and drew their milk supplies from their own immediate vicinities. The task of returning skim milk or whey to the producers supplying whole milk was therefore not difficult or uneconomic, and, indeed, many of the contracts made in those far-off times stipulated that a certain percentage of the producer's supply of whole milk should be returned to the farm as separated milk or whey at an agreed price. As the creameries gradually grew in size, their collection area increased, and, with the arrival of the motor lorry, the majority of producers ceased to deliver their own supply of milk into the creameries. The problem of returning the by-products necessitated special transport arrangements and added to the cost very appreciably. Many creameries in the early years of this century found themselves, therefore, with large seasonal surpluses of skim milk or whey for which buyers were difficult to find. In extreme cases waste land was bought and whey dumped on to it during the peak production period, and not a few cases are on record of summonses for polluting streams with dairy effluents.

The more progressive creameries started to dry or condense the separated milk, and from comparatively small and somewhat tentative beginnings, two huge branches of the dairy industry engaged in the manufacture of dried separated milk and sweetened condensed separated milk have arisen. During the last ten years the condensing and drying of whey has been developed and appears likely to assume considerable proportions.

MACHINE-SKIMMED SWEETENED CONDENSED MILK.

Method of Manufacture.—The warm separated milk leaving the power separators is immediately heated in a flash pasteurizer to a temperature between 170° F. and 200° F. This forewarming of the milk has a fourfold purpose. It destroys the great majority of the bacteria present in the milk; it facilitates the solution of the sugar if the practice is to add this direct to the milk; it reduces the condensing time and finally has a beneficial effect on the viscosity of the finished product. In some condenseries the sugar is boiled up in water and added to the milk in solution. This practice is advantageous if the sugar is unduly contaminated with yeasts or contains an appreciable amount of foreign matter, as the boiling destroys the yeasts and the foreign matter can be strained out of the sugar solution before it is added to the milk.

The amount of sugar added is carefully calculated and varies between 20 and 21 pounds for each 100 pounds of separated milk. Finest granulated sugar is used and, until a few years ago, condensery operators would only use cane sugar, but now that the standard of refining of beet sugar has so improved there is no reason to avoid its use in condensed milk manufacture.

The forewarmed and sweetened milk is next drawn into a vacuum pan and concentrated by boiling under reduced pressure. Most vacuum pans are of the batch type, which means that they are designed to take gradually a definite weight of milk and sugar and concentrate it to the desired density. The intake of milk is continuous during the greater part of the condensing operation, and the inlet valve is only closed when the whole charge has been drawn into the pan. As concentration has been taking place during the whole time that the charge has been entering the pan, the finishing stage, with the inlet valve closed, lasts only 20 to 30 minutes and the whole operation two and a half to three hours. A few evaporators of the continuous type have recently operated successfully with milk.

Whether of the batch or continuous evaporator type, all pans operate under a vacuum of 24 to 28 inches maintained by means of an air pump, and the water vapour coming away from the boiling milk is drawn out of the pan by the pump and condensed in a jet or spray condenser fitted in the pipe joining the dome of the pan to the air pump. Less frequently, condensers are fitted in the dome of the pan itself. In the basket coil type of pan, the base of the pan is steam jacketed and two separately controlled steam coils are situated in the lower portion of the pan. Steam is first applied to the jacket and as the milk gradually covers

the coils, the steam is successively turned on, first in the bottom coil and finally in the top coil, and the milk rolls over the heated coils and is maintained in vigorous ebullition. In the forced circulation type of evaporator, the milk passes through tubes which are steam heated on the outside, returns to the pan, flashes off its vapour and in due course is again drawn through the heated tubes and the cycle is continuous until concentration is completed. Owing to the reduced pressure (vacuum) maintained in the pan the boiling temperature is well below 212°F . With the vacuum maintained between 24 and 27 inches when the barometer registers 29 inches, the boiling temperature will range between 130°F . and 145°F . The boiling temperature, of course, rises slightly as the concentration increases in the pan. When concentration is nearly completed, the operator takes a sample from the pan by means of a sampling device fitted into the wall of the pan and tests it for viscosity, this physical factor having been found to be the most satisfactory method of control at this stage in the manufacturing process. As soon as the correct concentration revealed by the viscosity has been obtained, the steam is turned off, the vacuum broken and the milk run out of the pan into coolers.

Satisfactory cooling of sweetened condensed milk is difficult owing to its composition and increasing viscosity as cooling proceeds. It contains 42 to 44 per cent. of added sugar, 29 to 30 per cent. of milk solids and only 26 to 27 per cent. of moisture. Furthermore, the sugar is in super-saturated solution and will partly crystallise out during the cooling process. The aim of the operator is to keep the sugar crystals as small as possible, and to do this it is necessary to throw down all the crystals in the shortest possible time when the milk reaches a suitable temperature. Various types of specially designed coolers are in use. The oldest type which found favour consisted of deep cylindrical drums with paddle agitators set in tanks containing running water. A later successful type comprised a horizontal cylindrical water-jacketted vessel with an internal water-cooled eccentric helical coil which, when revolved, satisfactorily agitated the viscous milk. More recently the method of cooling by "high vacuum" has been successfully introduced. In this method, the milk leaving the pan is drawn into a sealed hollow vessel and agitated by a revolving paddle, whilst a higher vacuum than that used during the condensing process is drawn. As the vacuum increases the boiling point of the liquid is lowered and the condensed milk cools itself by slowly boiling off a small portion of its liquid. This self-cooling by evaporation will, perhaps, be better understood by a moment's study of the boiling point of water at various pressures.

Absolute Pressure, lbs. per sq. in.	Vacuum, Inches of Mercury.	Boiling Point, ° F.
14.7	—	212
10.0	9.5	193
5.0	19.7	162
2.0	25.8	126
0.5	28.9	80
0.2	29.5	50

It will easily be seen that when the absolute pressure is lowered to 0.2 inches, water will boil until its temperature is lowered to 50° F. The boiling points for condensed milk are slightly higher than those for water, but, as the makers of the cooler guarantee to achieve a vacuum within 0.25 inches of absolute, a final cooling temperature of 55-60° F. can easily be achieved.

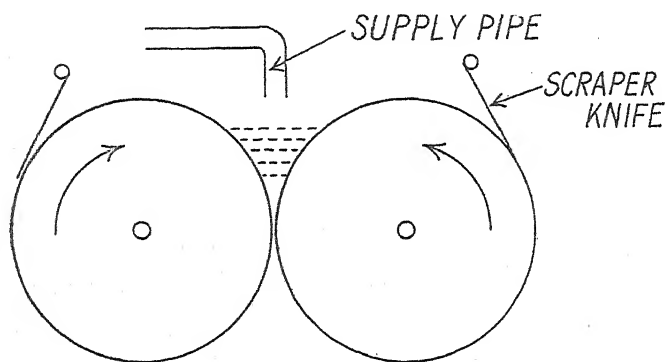
Whatever type of cooler is employed, it is usual to stop the cooling for 20 to 30 minutes when the temperature has been reduced to 80-90° F. In this temperature range the sugar crystals are thrown down rapidly and rapid crystallization ensures small-sized crystals. The practice of adding a small quantity of a previously made batch of milk or a little powdered milk sugar is frequently found, as the crystals in the cold condensed milk or milk sugar encourage rapid crystallization. After the forced crystallization period is over, cooling is continued, ideally, until the temperature of the milk is down to 65° F., but with water-cooling in summer time, this temperature can seldom be achieved in reasonable time.

After cooling, the milk is either filled into small cans and sealed or into oak barrels holding 5 to 6 cwt. of milk. The small cans vary in size and contain anything from the equivalent of one and three-eighths pints of separated milk up to two pints, and practically every eighth-pint gradation between these two extremes is found on the retail market. To such magnitude had the sales of this commodity risen that, in 1923, the Government considered it desirable to prescribe that all machine-skimmed condensed milk be labelled "Unfit for Babies," as it was undoubtedly being used by the poorer classes for infant feeding. The condensed milk, filled into oak barrels, is used in the confectionery trade in the manufacture of toffee and caramels.

Dried Separated Milk.—Two methods of manufacturing this commodity are in use, and as they are so radically different in principle and the products have both different characteristics and markets, they must be described separately.

Just Hatmaker Roller Process.—This process is used particularly in smaller creameries, as the outlay on plant and buildings

is only a fraction of that required for a condensing or a spray-drying plant. The apparatus consists of two hollow "semi-steel" drums machined both inside and out and closed at the ends by steam tight covers, mounted horizontal and parallel with a clearance between them of about 0.25 inches: When in operation the drums revolve in opposite directions, upwards and inwards. Steam at 40 to 70 lbs. per square inch (temperature 285° F. to 302° F.) is led into the cylinders and the condensate leaves through steam traps at the opposite end of the drums. The condensate leaves intermittently by syphonic action, and it is so arranged that when in operation the drums are always approximately two-thirds full of condensate.



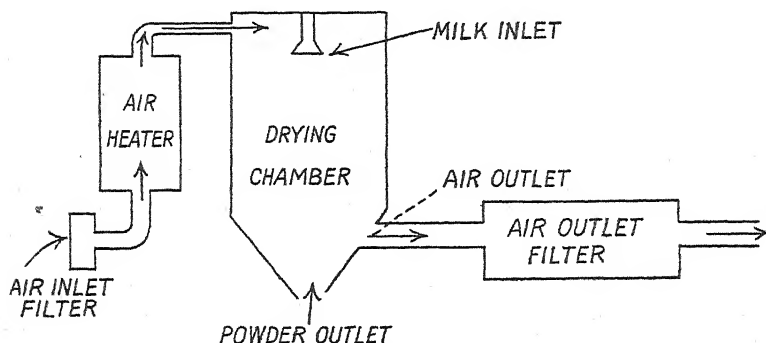
Flash pasteurized milk at 160° F. to 170° F. is fed into the well formed between the two drums where it boils vigorously, and as the drums revolve at 14 to 18 revolutions per minute, a thin film of milk adheres to the surface of the drums and is completely dried before it reaches the scraper knives mounted on the outside of the drums. These knives scrape off and turn back the dried films which descend into conveyor troughs or bins set to receive them. The flaky, dried milk is then put through a brush sifter to reduce it to a coarse powder and remove any over-dried and charred particles.

One drier working on separated milk can dry 50 to 65 gallons per hour depending on the speed of revolution of the rolls and the steam pressure used. Batteries of two, four or six sets of rolls are not infrequently found, and one man can look after several sets of rolls provided the dried milk is conveyed away mechanically. A greatly increased output can be obtained if the separated milk is concentrated before feeding it to the rolls, but this necessitates the provision of a condensing plant. A small condensing plant with two sets of rolls has a distinct advantage over a plant with four or even six sets of

rolls, as it permits of the manufacture of condensed milk when the dried milk market is unfavourable.

Roller dried milk is a coarse powder which is only about 75 per cent. soluble in hot water (200° F). Reconstituted milk made from it has a distinctly cooked taste. It is chiefly used in the manufacture of biscuits and the cheaper varieties of chocolates, and more recently it has found its way on to the farm for calf and poultry feeding and as an ingredient of balanced rations.

Spray Drying Process.—Several types of plant have been evolved, and differ in various features, but all employ the method of spraying concentrated milk into a large chamber through which a rapidly moving stream of hot air is passing. The hot air effects the evaporation, and also conveys off the moisture removed from the milk.



Diagrammatic arrangement of a Spray Drying Plant.

Fresh air is sucked into the plant through an efficient inlet filter which removes any dust and dirt particles. It next passes to the air heater in which its temperature may be raised as high as 320° F., and then into the drying chamber into which the concentrated milk is fed in a fine atomized spray. The air and the minute milk particles swirl round the chamber in intimate contact, and the extraction of the moisture from the milk is obviously very rapid. The moisture-laden air is drawn out of the chamber, and as it takes some of the dried milk with it, it is passed through heavy filter bags which extract the powder before the air returns to the atmosphere. The bulk of the powder passes out through the main powder outlet in the base of the chamber, and the powder extracted from the filter bags is periodically added to it. In the various makes of plant available considerable differences in the position of the milk feed and the air inlet and outlet from the drying chamber exist, and at least

two plants have a smaller secondary drying chamber or separator which collects an appreciable amount of the powder before the air passes to the filter bags.

While the process appears at first sight to be a simple one, the actual control of a spray drying plant is difficult. The volume and the temperature of the air entering and leaving the plant have to be most carefully adjusted to secure a satisfactory dried product. Further, as the moisture-laden air passes out of the plant at a temperature in the region of 200° F., the heat efficiency of this method of drying is by no means ideal. Long runs are therefore essential, as the amount of heat required to warm up the huge chamber and air ducts leading to and from it is very considerable. These long runs can only be arranged at creameries of considerable magnitude, and as the milk entering the chamber is almost invariably concentrated, a condensing plant in conjunction with the drying plant is almost essential. Very high capital costs on buildings and plant have, therefore, to be faced in the installation and running of a spray drying plant. The spray dried powder leaves the chamber quite hot, and in order to avoid its becoming caked when cold, it is usually cooled by means of a sifting operation which, in addition, removes any charred particles which may have fallen off the sides of the chamber.

Spray dried milk is a very fine powder in which all the particles are of more or less uniform size. It does not require any disintegration, and in this respect differs materially from the roller-dried article. It is 95 to 98 per cent. soluble in cold water, and on reconstitution the milk has little more cooked flavour than pasteurized milk. Packed in 1 cwt. three-ply kegs or $\frac{1}{2}$ -cwt. and smaller tin plate cases, it is used in the ice cream and baking industries in this country. It is also an ingredient of numerous proprietary tonic foods and beverages, and it can be used in the confectionery industry as a substitute for condensed milk.

Condensed and Dried Whey.—During the last dozen years an increasing amount of whey has been dried or condensed, and commercial uses are slowly being found for it. The condensing and/or drying is, unfortunately, owing to the very low percentage of solids in whey, an even more expensive process than the similar one for separated milk. Furthermore, the whey has a higher acid content, which makes the drying operation on Hatmaker rollers one of considerable difficulty. Against the 9 per cent. of solids in separated milk, there is only between $6\frac{1}{2}$ and 7 per cent. in whey, and of this, 0.3 per cent. is butter fat, which is almost completely removed by separating the whey before passing it on to the condensing and drying plants. The whey cream is usually washed in water, and ripened with separated milk before being

manufactured into second grade or cooking butter. The remaining solids consist very largely of milk sugar, which is in complete solution, and readily caramelizes on the heated rollers of the Hatmaker machine. A further difficulty is caused by the free lactic acid which gives the finished product deliquescent properties, and causes it to cake and set into rock-like masses. This trouble can be appreciably reduced by neutralizing the whey with lime before drying. The usual method of procedure is to concentrate the whey to 25 per cent. solids, and feed it to Hatmaker rollers on which the scraper knives are of stouter constitution and have been set at a sharper angle than that used for separated milk. The reason for this is that the concentrated whey comes off in a much thicker gummy film, and if the knife is too oblique, there is a tendency for the whey to adhere to it, instead of dropping off into the hoppers placed to receive it. After drying, it is usual to grind the lumps of material in a high-speed disintegrator before packing for sale. At the present time the bulk of the dried whey is utilized in the cattle food industry, and it seems to be particularly valued in poultry rations. Its low protein content, however, makes it expensive when valued on the normal basis for animal foodstuffs. In addition to the roller process, a certain amount of whey is dried by the spray method, and where this is utilized, the whey is concentrated to 40 per cent. solids before feeding to the drier. Similar problems arise in the spray drier as are experienced in the drum method. Owing to the sticky nature of the product there is considerable difficulty in removing the dry particles from the main drying chamber. The finished product is, however, greatly superior to the roller-dried product, and is used in producing dried humanized baby and invalid foods, and it has been used with success as a substitute for dried milk in bread-making. A certain amount of whey concentrated to 45 per cent. solids is sold in barrels for reconstitution on the farm for pig feeding. The cost of the barrel is, however, a serious deterrent in the development of this outlet. In addition to the above, there is one organization in this country producing pure lactose (milk sugar) from whey, and supplying it to the pharmaceutical industry. This is a particularly interesting development, as previously practically the whole of our lactose requirements were imported from abroad.

Non-Edible Products.—From casein, the principal protein in separated milk, three very interesting non-edible products have been made. The water-resisting glues which are of vital importance in aeroplane fuselage manufacture are made from casein, and many attractively coloured non-inflammable articles, like bathroom tiles, stair rods, cigarette holders, and fountain pen bodies, have been made from this same material.

More recently, in their attempt to attain economic self-sufficiency, the Italians have produced a cloth, known as Lanitol, from casein. Superficially this material looks very attractive, but when woven into cloth, without a very large addition of wool, its wearing properties have not proved to be very satisfactory. It is now being used in the proportions of about one-third Lanitol and two thirds wool, to produce a smart-looking though somewhat harsh-feeling cloth.

In conclusion, it is hoped that this outline of the methods in use for concentrating and preserving dairy by-products has been sufficiently full to indicate that the manufacturing industry is not unappreciative of its responsibility or of the high food value of the various products now being made. Whilst at the present time we may be a little behind our competitors in some European countries, and in the United States of America, in the preparation of special articles from milk and whey, enormous strides have been made in a comparatively short span of years, and the time would appear to be not far distant when the by-products will be economically almost as important as the principal products of butter and cheese.

FAT CONTENT OF THE WHOLE CHEESE AS A STANDARD.

BY T. J. DRAKELEY, D.Sc., Ph.D., F.I.C., F.I.R.I., F.C.S.

In England there are no official standards for cheese, but on numerous occasions the British Farmers' Association has made representations asking for this problem to receive attention.

The problem, during the many years the British Dairy Farmers' Association has had it under consideration, has changed and been complicated by the advent of the various types of processed cheese.

COMPOSITION OF BRITISH CHEESE.

The following figures give the average compositions of good typical cheeses which have been analysed by the Association:—

Cheese.	Water.		Fat.		Protein Ash, &c.	Fat in the Dry Matter.
	per cent.		per cent.		per cent.	per cent.
Cheddar	34·6	31·2	34·2	47·8		
Cheshire	32·5	33·3	34·2	49·5		
Stilton	32·1	35·6	32·3	52·1		
Wensleydale	31·9	32·3	35·8	47·6		
Derby	30·7	32·8	36·5	47·0		
Leicester	33·0	31·1	35·9	46·8		
Lancashire	34·2	30·7	35·1	46·7		
Caerphilly	24·9	30·3	44·8	40·4		
Gloucester	34·9	28·1	37·0	45·2		
Dorset (blue)	42·3	9·8	47·9	17·0		

Some of the above cheeses are of international renown, but others are local cheeses only well known and sold to any extent in certain districts. However, their consistency may be assumed to be known to the purchaser, and the latter it not likely to buy immature cheese containing a relatively high proportion of water.

FAT IN THE DRY MATTER.

For such cheeses, it is sufficient to ask that the statutory standard should be a minimum content of fat in the dry matter. Thus it would be satisfactory if it were enacted that no cheese shall be sold as Cheddar, Cheshire, Stilton, Wensleydale, Derby, Leicester, Lancashire, Gloucester which contains less than 45 per cent. of fat in the dry matter, as Caerphilly, with less than 40 per cent. of fat in the dry matter, and as Blue Dorset, with less than 17 per cent. of fat in the dry matter.

The problem is, however, rendered more difficult owing to the fact that there are manufactured, to a limited extent, in this country and also imported from abroad, cheeses made from partly skimmed milk.

NOMENCLATURE.

In England there are only three terms used to describe the types of any one cheese. They are (a) "whole-milk cheese," that is, cheese made from whole milk and from which no cream (fat) has been removed, (b) "partly skimmed-milk cheese," that is, cheese made from milk from which a portion of the fat has been removed, and (c) "skimmed-milk cheese," that is, cheese made from machine-skimmed milk which is almost devoid of fat.

These terms, however, hardly seem precise enough, and consideration might be given to the system adopted by most continental countries. Thus cheese made from whole milk containing all the fat would be termed "full-fat cheese." The term "partly skimmed milk" is very indefinite as no indication is given of the extent of the skimming. If the milk is one-quarter skimmed, and the remaining milk contains three-quarters of its original fat, the cheese made therefrom would be termed "three-quarter fat cheese." This term is a better and less ambiguous term than "one-quarter skimmed milk cheese."

Thus the following descriptions might be accepted:—

Description of Cheese.	Fat Content in the Dry Matter.
Super fat	Not less than 50 per cent.
Full fat	" " 45 "
Three-quarters fat	" " 35 "
Half fat	" " 25 "
Quarter fat	" " 15 "
Skimmed milk	Less than 15 "

Actually in the trade the terms mentioned above, such as "half fat" or sometimes "half meat" cheese, are already employed.

PROCESSED CHEESE.

Processed cheese is ordinary cheese (at present excluding blue-veined cheese) which has been heated with the addition of not more than 3 per cent. of an emulsifying agent (sodium citrate or sodium phosphate or a mixture of these substances) and has been cast into suitable shapes. Processed cheese manufactured by this method has a composition not differing greatly from the figures given above.

From analyses, it would seem that in England not more than two parts of the emulsifying agent per 100 of cheese is used. This means that when a Cheddar cheese is processed, the composition may be said to change as follows:—

	Water.	Fat.	Protein Ash, &c.	Fat in the Dry Matter.
	per cent.	per cent.	per cent.	per cent.
Original Cheese ...	34·6	31·2	34·2	47·8
Processed Cheese (parts)	34·6	31·2	36·2	—
Processed Cheese ...	33·9	30·6	35·5	46·3

The fat content in the dry matter falls by about 1·5 per cent. due to the addition of 2 parts of the emulsifying agent in the manufacture. In exceptional circumstances up to 3 parts of the emulsifying agent might be added, and in such instances if 45 per cent. in the dry matter is satisfactory for ordinary cheese, then 43 per cent. would have to be accepted for "full fat" processed cheese.

The above table adjusted for processed cheese thus becomes as follows:—

Description of Processed Cheese.	Fat Content in the Dry Matter.
Super fat	48 per cent.
Full fat	43 "
Three-quarters fat	33 "
Half fat	24 "

PROCESSED CHEESE TO SPREAD.

It is, however, when consideration is given to the type of processed cheese which is intended to be spread like butter that difficulties occur.

The actual analysis of such a processed cheese gave the following results, and included also are the probable figures if the same cheese had been made into a processed cheese to be cut in the usual manner.

Processed Cheese.	Water.	Fat.	Protein Ash, &c.	Fat in the Dry Matter.
	per cent.	per cent.	per cent.	per cent.
(A)—To be spread ...	60.2	18.1	21.7	45.5
(B)—To be cut ...	33.0	30.5	36.5	45.5

It would obviously be totally inadequate to describe the processed cheese (A) as containing not less than 45 per cent. of fat in the dry matter. Actually the cheese, as purchased, only contained 18.1 per cent. of fat and no less than 60.2 per cent. of water.

No doubt it may be expected that processed cheeses of various compositions between that of (A) and (B) above may be manufactured. It therefore follows that whatever standard method is adopted for describing the cheeses it must indicate the nature of such processed cheeses both with regard to the fat and the moisture.

One method is to state on the package of processed cheese, the percentage of water and also the fat content of the dry matter. Such a procedure would mean that on the package there would appear statements such as 45 per cent. of fat in the dry matter and 60 per cent. of moisture in the cheese. This method is confusing to the purchaser, as the basis for calculating the percentages is different in each case.

Another method would be to follow the example of certain foreign countries and stipulate the maximum moisture content

for various kinds of processed cheese. Thus, the following might be considered as a method:—

MAXIMUM MOISTURE CONTENT.

Processed Cheese.					To be Cut.	To be Spread.
					per cent.	per cent.
Super fat	...	...	...	...	45	54
Full fat	...	...	...	...	48	56
Three-quarters fat	...	...	...	...	52	60
Half fat	...	...	...	...	58	62
Quarter fat	...	...	...	...	60	64
Skimmed milk	...	...	...	...	60	64

Under this method, if a processed cheese were labelled as a "three-quarters fat-processed cheese" it would contain not less than 33 per cent. of fat in the dry matter, and either not more than 60 per cent. of water if the cheese were described as for spreading, or not more than 52 per cent. of water if the cheese were of the consistency to be cut and not spread.

METHODS.

The above statement shows that, in many continental countries where the fat content of the dry matter has been adopted to express the quality of the cheese, it has been necessary to specify the following standards:—

For ordinary full-fat cheese.—The minimum percentage of fat in the dry matter.

For processed full-fat cheese.—Another lower minimum percentage of fat in the dry matter, two maximum percentages of water in the processed whole cheese according to whether the cheese is intended to be cut or spread.

To these standard figures must be added another complete set if the cheese is three-quarters fat, or half fat, &c. It follows that a complicated series of standards which cannot possibly be remembered by the purchasers is thus created.

If, however, it is possible to state that a cheese shall not contain less than 45 per cent. of fat in the dry matter and not more than 48 per cent. of water, then this is equivalent to saying that the whole cheese as sold shall not contain less than 23 per cent. of fat. Surely, therefore, the easiest method of expressing the quality of the cheese is to state simply that the fat content of the *whole cheese* shall not be less than 23 per cent.

Obviously, as the most important constituent of the cheese is the fat, it should be sufficient to insist for all cheese, whether ordinary or processed, that the label shall state the fat content of that cheese *as sold*.

There are, nevertheless, certain difficulties which cannot be overlooked. In the first case, nearly every continental country, and most of the Dominions exporting cheese to England, have adopted the fat content of the dry matter as the basis. Undoubtedly many such countries must now wish that they were free to adopt the simpler method without the necessity of promoting further legislation for that purpose. England, however, is at present in the fortunate position of having officially recognised no special method as yet, although in the regulations for National Mark Cheese, the fat content of the dry matter is mentioned.

It is to be hoped that in England favourable consideration will be given to the simple and effective method of expressing the standard quality of a cheese in terms of the fat content of the whole cheese, and thus avoid the many difficulties which have arisen by using the fat in the dry matter for that purpose.

SUGGESTED SCHEME.

If it is agreed that the fat in the whole cheese shall be adopted as the standard, careful consideration is necessary to determine the best method of giving effect to this decision, and this is, in turn, determined by the objects of such standardisation.

The reasons for adopting standards for cheese are: firstly, to safeguard the producer and consumer against fraud; secondly, to ensure that the name attached to a cheese, such as Cheddar, shall not be given to cheese below a certain standard and shall not thus be discredited; and thirdly, to secure, as far as possible, international agreement and acceptance.

The first and second statements above are obviously the general reasons for standardisation. The good producer of cheese wishes to be safeguarded against less scrupulous competitors who may attempt to market a low quality cheese at a price uneconomic for the good cheesemaker. In the same way, the consumer should be protected against such unscrupulous makers. Further, it will be accepted that when a well-known name, such as Cheddar, is used in connection with a cheese, it designates a definite quality below which it should be illegal to use that name. The application of a name such as Cheddar to an inferior cheese brings discredit on all makers and may seriously diminish the public demand for that cheese. The name should, therefore, be legally protected.

The third reason concerns international agreement. At present, as there are no standards in this country, the names of British cheeses are given to foreign-made cheeses sold in foreign countries which bear no resemblance whatever to the home cheeses. The writer purchased a few years ago in Belgium, cheese labelled "Chester" or "Cheshire" which was made in Sweden and which only contained 30 per cent. of fat in the dry matter and was thus quite different from a real Cheshire cheese. This is merely an example, other instances are quite well known. It is, therefore, obvious that to safeguard, for instance, the good name of Cheshire cheese in international trade, an agreement should be attempted through the International Dairy Federation to restrict the name to cheese of not less than a given quality, but before this can be done, a minimum standard must be adopted in this country.

It remains, therefore, to consider the best and simplest method of expressing the standards, bearing in mind that the standards will apply to three different classes of cheese, namely, the original cheese, the processed cheese made to be cut, and the processed cheese made to be spread. The chief difficulty arises with the latter, which may contain over 60 per cent. of water.

A suggestion is therefore made that standards for cheese in this country should be adopted on the following lines:—

- (1) That for ordinary cheese the names Cheddar, Cheshire, Stilton, Wensleydale, Derby, Lancashire, Leicester be prohibited unless the cheese contains not less than 30 per cent. of fat in the whole cheese. The maker may add to his description words to the effect that the cheese contains not less than 30 per cent. of fat in the whole cheese, if he so desires.
- (2) That for processed cheese, the names Cheddar, Cheshire, Stilton, Wensleydale, Derby, Lancashire, Leicester be prohibited unless the processed cheese contains not less than 29 per cent. of fat in the whole cheese. The maker may similarly add that the processed cheese contains not less than 29 per cent. of fat in the whole processed cheese if he so desires. The word "processed" must appear in the description.
- (3) That all other types of cheese, whether processed or ordinary, bear a label stating the minimum percentage of fat in the whole cheese. If the cheese is "processed" the word must appear in the description.

ADVANTAGES OF THE SCHEME.

The above scheme has certain advantages. In the first case, when the consumer sees the familiar names of Cheddar, Cheshire, &c., he is assured of a reasonable degree of protection against fraud, in the same way that when he purchases milk he is similarly safeguarded. He is not worried about figures. Few persons buying milk could quote the Government minimum standard, and to do so is unnecessary. In the same way, it is quite unnecessary for the consumer to know details of the composition of cheese. All he requires is protection against misleading statements and an assurance that the goods will be of the nature, quality and standard desired.

The position with regard to that type of processed cheese which is made to be spread may seem rather peculiar, but it is contended that cheese containing as much as 60 per cent. of water ought never to be sold under the name of any specific type of hard cheese. It would seem ridiculous to append such names to cheeses of this type. Such cheeses should be sold under a trade name, as indeed many are to-day, and should necessarily bear a label or description giving the minimum percentage of fat in the whole cheese.

If such a scheme were adopted, then application should immediately be made to the International Dairy Federation asking for similar protection of the names in international trade. It may be added that in conversation which the writer has had with other representatives on the International Dairy Federation, such representations would receive favourable consideration, as obviously the uncertainty which exists at present reacts to the disadvantages of the good manufacturer, whether British or foreign.

DISADVANTAGES OF THE SCHEME.

The chief and most pressing disadvantage of the above scheme is that most of the Dominions and foreign countries have adopted the "fat in the dry matter" as the standard. It also appears in our own National Cheese Mark conditions.

However, there is obviously no need for this country to adopt the method of even the majority of other countries when it has been acknowledged by most of them that their system has failed with the modern processed cheeses now on the market to give the simple protection required. To retain the "fat in the dry matter" as a standard, some countries have enacted complicated regulations controlling the sale of the various processed cheeses. Such complex regulations are unnecessary if the simple method of declaring the fat in the whole cheese is adopted.

NOTES ON BUTTERMAKING.

BY ALEC TODD.

For a number of years samples of butter have been sent to me for criticism, many of them of very poor quality. With very little trouble and some knowledge on the part of the maker these could have been improved, and for the guidance of those who still make butter on the farm these notes are compiled.

The demand for good flavoured butter remains constant and it is possible for such butter, even if made in small quantities, to be the best on the market.

Unfortunately the great majority of farm-made butter is unreliable in quality and irregular in quantity, and in consequence, much of it is sold at a very low price for blending purposes. The unreliability of such butter is due to the careless methods of production and manufacture, for it seems difficult to make people realise that milk and its products are most susceptible to contamination. The maker must ensure cleanliness and efficiency throughout, if the finished product is to be of reliable market value.

The first point is that of the milk production, as much contamination can be avoided by the cleaning of buildings and cows, and by careful methods of milking.

Subsequent handling of the milk and cream is equally important and the vital necessity for the efficient sterilisation of all utensils cannot be over emphasised. All dairy utensils should be well scrubbed and boiled or steamed daily and the practice must be constant if success is to be achieved.

The second vital point in the production of butter of uniformly high quality is the treatment of the cream. Contamination during ripening and careless handling are probably the most frequent causes of inferior butter. It is a hopeless procedure to place the cream in a vessel and leave it to its fate, probably in a badly ventilated damp room, subject to the contamination of moulds and bacteria.

In exceptional cases when the milk is cleanly produced, it is possible to ripen the cream by means of the natural development of acidity, but very often there are other organisms present which prevent the proper ripening taking place and produce rancid, strong flavours in the butter.

The use of a pure culture starter goes far towards achieving the correct type and degree of acidity in the cream and the keeping of this starter going need not inconvenience

small makers. The most important point in the use of a starter for ripening cream is that it should be added to the first lot of cream saved for churning. This practice will enable the lactic fermentation to commence at once and to predominate during the whole process of ripening. Starter can be obtained ready for use from most of the Dairy Schools. It is only when large quantities of cream are churned that it is necessary to make a starter daily. If the cream is carefully handled, a starter may last for months, by saving a small quantity of the properly ripened cream to act as a starter for the next churning, as this cream contains the same organisms as the original starter. Should any bad flavours arise in the cream then a fresh starter should be obtained.

An additional precaution for the production of good flavour is that the cream should be pasteurised to 160°F. immediately after skimming or separating, and cooled at once to 65°F. and the starter added. The following day, after separating, pasteurising, and cooling the fresh cream as low as possible, add it to the inoculated cream, stirring it in thoroughly. Do not add fresh cream to ripened cream the morning of churning but inoculate this with a small quantity of the properly ripened cream and save it as the nucleus for the next churning.

The cream should not be separated too thickly and, if there is a demand for thick cream for sale, then what is left for churning should be thinned down with separated milk, so that the yield of butter is about 3½ to 4 lb. to the gallon of cream. Thick cream is difficult to ripen properly and is also inclined to produce a greasy texture in the butter.

The texture of the butter is governed to a large extent by the temperature at which the cream is kept before churning. It is quite safe to keep it at about 65°F. for the first two days of ripening to get the lactic ferments well established. After this it is advisable to get the temperature down as low as possible for at least 12 hours before churning in order that the fat becomes thoroughly hardened. When power churns are used the temperature of the cream is often reduced to 40°F., and churning is carried out at this temperature.

It is not wise to keep the cream too long before churning; it may become over acid and curdled and it is then difficult to prevent the incorporation of casein in the butter, which, later, produces white specks.

It is best to churn at least twice a week especially during hot weather. When ready for churning the cream should taste pleasantly acid and appear smooth in texture, not curdy or frothing.

There is such a wide range of churning temperatures that it is difficult to state a suitable one, but it is always best to churn at as low a temperature as possible and the range may be from 40° to 55°F. If at this stage the cream is too thick, it should be thinned down with cold water until it runs freely from the Scotch hand, as in this state it will churn more easily. Do not fill the churn more than half full as during churning the cream swells and, if too full, there will be no concussion, and the time of churning will be lengthened.

The breaking stage is important, and, as the glass on the churn becomes clear, and the grains of butter become formed, cold water should be added. This water will reduce the temperature and at the same time help to separate the grains of butter. Churning should proceed until the grains of butter become formed and quite separate. On no account churn the butter into a lump at this stage, or it will be impossible to get the butter milk washed out of it later.

Next run off the butter milk through a sieve, and add the first washing water, about the same quantity as that of the butter milk taken off and, if possible, at a temperature lower than the churning temperature. Turn the churn a few times in order that the butter is completely freed from butter milk. Run this water off and add a second washing water, to which, if the butter is to be brined, $\frac{1}{2}$ -lb. salt to the gallon of water can be added, and the churn again turned a few times; then allow the butter to remain in the brine for 15 minutes.

Now comes a very important stage in the manufacture of butter, that of working. The butter is taken carefully from the churn and placed on the worker and it will depend on the hardness of the butter how often the roller should pass over it. Careful working is essential and is continued until the butter is solid and free from apparent moisture, which should not be more than 16 per cent. If the butter is churned at a high temperature and becomes greasy with working it is impossible to get a close, firm texture, and a soft, bad-keeping butter is the result.

When dry salting small quantities, it is advisable to sprinkle on the salt when the butter is in the granular state; the amount may vary from $\frac{1}{4}$ to 1 oz. of salt to the pound of butter. After salting, partly work the butter and allow it to stand for a time until the salt has dissolved, then complete the working. This will mix the salt thoroughly and prevent the streaky, unsightly butter so often found on the market.

The butter should be attractively made up, wrapped in greaseproof paper and stored in a cool airy room until consumed. Butter is very susceptible to mould contamination, and should not be left exposed in a damp badly ventilated room.

CONTAINERS FOR THE TRANSPORT AND SALE OF MILK AND MILK PRODUCTS.

BY T. J. DRAKELEY, D.Sc., Ph.D., F.I.C., F.I.R.I., F.C.S.

Acknowledgments.—The writer wishes to acknowledge the valuable assistance so willingly given by W. A. Nell, Esq., Express Dairy Co., Ltd.; Tudor H. Price, Esq., United Dairies, Ltd., and the British Standards Institution, without whose co-operation it would have been impossible to obtain much of the information in this article.

(A) MILK.

(a) *Transport of Milk to the Consumer.*

In England the milk is brought from the country districts to the towns for distribution to the consumer by retailing companies in (a) churns, (b) large tanks by motor lorry and (c) large tanks by railway. The milk so received is generally pasteurized in the towns and then distributed to the consumer in (d) glass bottles or (e) other containers. The following details give an idea of the means adopted to send milk to a large town like London.

(a) *Churns.*—The size of churns in use are those of capacities of 17 gallons, 12 gallons, 10 gallons and 8 gallons. The 17-gallon churn has taper sides and, in general, it may be said to be gradually disappearing from use. The churn which now appears to be the one most acceptable to the trade is the 10-gallon churn with straight sides. The straight-sided churns pack most conveniently for transit. Although no definitely accurate estimate is possible, it would seem that about 15 per cent. of the milk is transported in churns.

(b) *Large Tanks by Motor Lorry.*—Specially built tanks on motor lorries of a capacity of 1,250 gallons to 1,500 gallons on 4-wheeled conveyances and 2,500 gallons to 3,000 gallons on 8-wheeled vehicles are in use. The size of the tank is controlled mainly by the amount of milk to be carried from the locality and also by road conditions.

The present trend is to make the road tanks of stainless steel, although formerly, and still to-day, many tanks were glass (or rather enamel) lined or made of aluminium. Many of the latter are still in use, but it may be stated that there seems to be a definite tendency to standardise the 3,000-gallon stainless steel tank on an 8-wheeled chassis for motor traction.

The proportion of milk transported by this method is increasing, but at present is about 9 per cent. of the total supply.

- (c) *Large Tanks by Railway.*—The milk transported by railway is almost completely conveyed in 3,000-gallon tanks. The tanks were formerly of 2,000 or 3,000-gallon size and were glass lined or made of aluminium, but the present tendency is definitely to standardise stainless steel tanks of a nominal capacity of 3,000 gallons. Actually the capacity of the tanks may vary from the 3,000 gallons by ± 60 gallons, that is, by about ± 2 per cent.

Road-Rail Tanks.—If a dairy is not adjoining a railway siding, specially built tanks (usually 2,000 gallons capacity) on motor lorries for road transport to the railway are used. These lorries are constructed so that they may readily be mounted on a railway truck for rail transport. It would appear that their use is diminishing as town dairy operations are tending to be carried on at dairies with direct railway communication.

About 76 per cent. of the milk supply is transported by railway.

(d) *Delivery of Milk to the Consumer in Glass Bottles.*

By law, milk must be sold in multiples of a half-pint or in pennyworths; with the exception that milk may be sold in one-third pints under the Milk in Factories or Milk in Schools Schemes. The price for the one-third pint in factories administering the Scheme is one penny, and in schools, one half-penny.

The standard glass bottles in use are circular in cross section and have the following capacities:—

- (i) One-third pint bottle in the Factories and Schools schemes.
- (ii) Half-pint bottle.
- (iii) One-pint bottle.
- (iv) One-and-a-half-pint bottle. This size was rarely used several years ago and, as far as can be ascertained, it is now no longer in use.
- (v) Quart bottle. There is some evidence that the quart bottle is becoming slightly less popular, probably due to smaller households, but it cannot be concluded that this size is likely to be withdrawn from general use.

There is no standard method of sealing or closure for milk bottles.

(e) *Delivery of Milk to the Consumer in Cartons.*

There have been many attempts to deliver milk in towns in non-returnable waxed cartons, but up to the present with indifferent success. The cartons are usually circular in cross section. The capacities are similar to those for bottles. Only an insignificant quantity of milk is distributed in these containers.

(B) CREAM.

Cream is sold in bulk in churns of 8 or 10 gallons capacity, or in small quantities in either (i) 2-gallon, 1-gallon, $\frac{1}{2}$ -gallon or $\frac{1}{4}$ -gallon tins, or (ii) bottles of 1 quart capacity, or in bottles of numerous smaller sizes. The tendency is, however, for the use of smaller bottles to diminish rapidly as they are being displaced by non-returnable waxed cartons. The size of the cartons varies from those of one half-pint capacity to very small ones of about 1 fluid oz.

Cream is also sold in tins (see under section F).

(C) BUTTER.

When butter is sold in bulk it is usually packed in boxes lined with grease-proof paper and containing either 28 lbs. or 56 lbs. of butter.

In smaller quantities it is sold in grease-proof paper packages of 1 lb., $\frac{1}{2}$ -lb. or $\frac{1}{4}$ -lb. weight.

(D) DRIED MILKS.

The containers for dried milks may be kegs, tins, Venesta packages, paper-lined bags, paper-lined or tin-lined cases.

Roller Process Dried Milk Full Cream is usually packed in :

- 1 cwt. tin-lined cases or cases containing two $\frac{1}{2}$ -cwt. tins.
- 56-lb. fiberite cartons.
- 1 cwt. paper-lined wooden cases (from the Netherlands).

In small bulk, it is sold in 1 lb. or 2 lbs. hermetically sealed tins for direct household use.

Roller Process Dried Skimmed Milk is packed in :

- 1 cwt. tin-lined cases or cases containing two $\frac{1}{2}$ -cwt. tins.
- 56-lb. fiberite cartons.
- 1 cwt. paper-lined wooden cases (from the Netherlands).
- 1 cwt. paper-lined bags.

Spray Process Full Cream Dried Milk and Skimmed Dried Milk are usually packed in :

2 cwts. Venesta barrels.

1 cwt. Venesta barrels.

1 cwt. tin-lined cases or cases containing two $\frac{1}{2}$ -cwt. tins.

56 lbs., 28 lbs., 14 lbs. and 7 lbs. tins.

In small bulk the full cream dried milk and the skimmed dried milk are sold in 1-lb. or 2-lb. tins for household uses.

Dried Whey.—This is usually packed in 1 cwt. paper-lined bags.

Dried Buttermilk.—This is usually packed in 1 cwt. paper-lined bags.

(E) CONDENSED MILKS.

The Public Health Condensed Milk Regulations, 1923, and the Public Health Condensed Milk Amendment Regulations, 1937, require that condensed milk for human consumption contained in a tin or other receptacle whose gross weight is less than five pounds shall be labelled in a specified manner. The label must state that "This tin contains the equivalent of (a) pints of milk," or, if it is sweetened, the words "with sugar added" must follow. If the condensed milk is made from skimmed milk, the tin must bear a label stating that "This tin contains the equivalent of (a) pints of skimmed milk," and, if sweetened, the words "with sugar added" must follow. Full details are given in the Regulations concerning other statements which must appear on the label and for the determination of the value of (a).

However, as a result of these Regulations, the sizes of the tins are often stated in terms of the equivalent volume of milk (or skimmed milk). In each case, however, the volume of the container, as described in the trade, in fluid oz. has been given. It should be observed that the trade description does not actually indicate the real volume of the tin. Thus, a tin described in the trade as 14 ozs. may actually only contain 11 ozs. The packing cases are usually wooden, although cardboard cartons are occasionally used.

Packings for Sweetened Condensed Full Cream Milk in Tins.

Cases of 48, 14-fluid oz. tins: equivalent to $1\frac{3}{4}$ pints.

„ 48, 13- „ „ „ : „ „ $1\frac{5}{8}$ „

„ 96, 7- „ „ „ : „ „ $\frac{7}{8}$ pint.

Packings for Unsweetened Condensed Full Cream Milk in Tins.

Cases of 48, 16-fluid oz. tins: equivalent to 2 pints.

„	48, 15-	„	„	„	:	„	„	1 $\frac{7}{8}$	„
„	48, 14-	„	„	„	:	„	„	1 $\frac{3}{4}$	„
„	96, 6-	„	„	„	:	„	„	$\frac{3}{4}$	pint.

*Condensed Skimmed Milk in Tins.*Cases of 48, 21 $\frac{1}{2}$ -fluid oz. tins: equivalent to 2 $\frac{3}{8}$ pints.

„	48, 18-	„	„	„	:	„	„	2	„
„	48, 17-	„	„	„	:	„	„	1 $\frac{5}{8}$	„
„	48, 16-	„	„	„	:	„	„	1 $\frac{3}{4}$	„
„	48, 15-	„	„	„	:	„	„	1 $\frac{5}{8}$	„
„	48, 13 $\frac{1}{2}$ -	„	„	„	:	„	„	1 $\frac{1}{2}$	„
„	48, 12 $\frac{1}{2}$ -	„	„	„	:	„	„	1 $\frac{3}{8}$	„

Condensed Full Cream Milk and Machine-Skimmed Milk in Bulk.

The usual packings consist of wooden barrels containing about 5 $\frac{1}{2}$ cwt., or returnable churns.

There is small demand for tins containing 7 lbs., 14 lbs. and 28lbs.

(F) THE BRITISH STANDARDS INSTITUTION AND METAL CONTAINERS FOR MILK PRODUCTS.

The British Standards Institution has under consideration the size of metal containers for various food products, and is suggesting that standards for metal containers for cream and condensed milks should be adopted. Full details of the suggested standard sizes are now available.

NOTE.—The trade description of the tin and its capacity is given above, but the trade description is merely nominal and usually the real capacity of the tin is less.

ADVERTISING MILK.

By T. J. STEWART, N.D.A., N.D.D.

(Prize Essay.)

There are few subjects which can be more important to Dairy Farmers than one which is capable of bringing about greater security in the occupation which they follow.

The words "Advertising" and "Publicity" are frequently used by publicists; the former is employed to express the media used by advertising agents who show a preference for contracts easily subject to a commission, as exemplified by poster, press, film, and air advertising schemes, operated either directly or farmed out, and the latter to express other forms of publicity, not necessarily less effective, and including control of demonstrators, lecturers, canvassers and interviewers and the personnel required in the preparation of letters, press articles, posters and films and all other media used in propaganda schemes, carried out without the help of advertising agents. In this article the words are used indiscriminately.

Interest in milk propaganda is not solely commercial and, on account of dietetic considerations, numerous Government departments, associations and individuals are both willing and anxious to promote increased consumption. A third group with an indirect commercial interest includes the fuel companies, patent food companies, and others who realise that an increased appreciation of milk will lead to increased business in the products which they sell.

The Ministry of Health, the Board of Education, the Ministry of Agriculture, Medical Officers, Women's Institutes, advertising agents, milk producers and distributors, labour employers, gas companies and electricity companies, school-masters and cereal food manufacturers are numbered amongst the parties who might be induced to exert an influence in an organised advertising campaign. From the foregoing it must be clear that in any national scheme of advertising, liaison with interested parties must be of paramount importance. The above-mentioned parties exercise a certain degree of control, the extent of which may be appreciated only by a review, on a national scale, of the conditions of employment, housing, environment, movement, remuneration, taxation, habits, influences and ages, and other factors which have a bearing on the lives of the people.

Such a review must be incomplete but it may be immensely helpful and much information can be gleaned from the census reports, market, and dietetic surveys which are available for reference.

A general consideration of the population and its distribution will form a basis for more particular study and, for convenience, round figures will be quoted.¹

The population of England and Wales in 1931 was 40,000,000 persons, about 19,000,000 being males and 21,000,000 females. Approximately 20,000,000 lived in towns with a population of over 50,000 inhabitants and the industrial populations were mostly concentrated in five areas focussed near Manchester, London, Birmingham, Cardiff and Newcastle.

The population can be divided arbitrarily into seven groups as under.

Group.	Description.	Percentage of Population.
1.	Children under 5 years of age either at home or at school	7
2.	Children between the ages of 5 years and 15 years mostly at school	19
3.	Males and females gainfully employed mostly between the ages of 15 and 65	45
4.	Males and females employable but out of work	4
5.	Males and females retired from work ...	2
6.	Married women not working for gain ...	20
7.	Students and others not working for gain	3
Total		100

The above figures cannot be strictly accurate on account of fluctuations in employment and other influences but they are accurate enough to indicate the relative strengths of the groups.

From figures supplied by the Ministry of Labour², it is estimated that 800,000 young persons and 4,400,000 adults are employed in some 4,703 factories. Of the total factory population, more than one half is employed in factories whose workers

1. Census of England and Wales, 1931.

2. Annual Report of the Chief Inspector of Factories and Workshops for the year 1935.

number less than 250. A large number of workers are employed in factories and workshops where the total number of hands does not exceed fifty. Taking both sexes, over 5,000,000 are employed in factories, nearly 3,500,000 in commerce and finance, over 2,500,000 in personal service, over 1,000,000 in each of the industries of agriculture, coal-mining, building and local government. The heavy industries—engineering, shipbuilding, iron and steel—account for 1,250,000, and road and rail transport for another 1,000,000. The remainder is spread over a variety of occupations.

It should be clearly realised that the majority of the people spend the greater part of each 24-hour day at home, and it is in the homes of the people that the greatest number of meals are consumed. Married women, housekeepers and landladies are responsible for spending a high proportion of the money earned and any successful campaign for increased milk consumption must depend on the co-operation of these parties. Most children under 15 years, most married women not at work and most of the unemployed take nearly all of their meals in their homes, whilst a percentage of business people and school-children may take one or more meals in their places of business or in public restaurants.

The importance of educating the rising generation in cooking and in dietetics is, therefore, great. This point is stressed by Burnet and Aykroyd³ and by Viscount Lynton⁴, and has received consideration by the Health Committee of the League of Nations.

Apparently the average family consists of about four persons and the average earning capacity of the principal money earner is less than four pounds per week⁵. It occurs frequently, nevertheless, that a family has more than one money earner or that lodgers are kept or that one or more members of the family have investments or that poor relief is involved. Most families, therefore, have two incomes, which, when added together, are less than six pounds per week. The population can be divided into six income groups⁶, according to the income per head per week, one-tenth having an income of under 10s., one-fifth between 10s. and 15s., one-fifth between 15s. and 20s., one-fifth between 20s. and 30s., one-fifth between 30s. and 45s. and one-tenth over 45s. The average income per head is about 30s. and the average expenditure on food 9s. per week or £95 per family per year. It has been computed that at present prices, the average family should spend about £20 per annum on milk.

3. Burnet and Aykroyd (1935): *Nutrition and Public Health*.

4. Viscount Lynton: *Famine in England*.

5. Major G. Harrison and F. C. Mitchell: *The Home Market. A Handbook of Statistics*.

6. Sir John Orr: *Food, Health and Income*.

The chief interest in these figures is that part of the population is so poor that there is not sufficient money to buy food of good quality in sufficient amounts and the milk problem becomes largely a sociological one. It is equally true that the greater part of the population can exercise a choice in foodstuffs and that milk propaganda should be directed to influence the choice in favour of more milk, either through a greater capital expenditure, or through the sacrifice of something less useful. An increased capital expenditure in the broad sense can only be brought about by increased prosperity. Incidentally, it does not follow that a reduction in price will result in increased milk consumption, for the saving in money may result in its distribution over a wider range of goods desirable in the eyes of the purchaser.

Some light has been thrown on the dietary habits of the people by K. A. H. Murray⁷, and by E. P. Cathcart and A. M. T. Murray⁸. It would appear that the way must be pointed by indicating to consumers, either collectively or individually, the standard of dietary efficiency they should try to achieve and by impressing on those responsible their obligations to themselves, to their families, and to the nation. Professor E. W. H. Cruickshank⁹ of Aberdeen University affords the following illustration of how an adult having ten shillings per week to spend on food should divide that sum. The percentages were as follows:—Milk 18, meat and fruit 12 each, butter 10, vegetables 8, bread, fish and eggs 5 each, flour, cereals and potatoes 4 each, sugar 3, cheese, jellies, tea and condiments 2 each, condensed milk and suet 1 each.

There is a similarity between these recommendations and those of Professor Mottram¹⁰, which are milk 27, meats 21, fruit and vegetables 20, cereals 11, butter and other fats 9, sugar, jam and sweets 5, miscellaneous 3, cheese 2, eggs 2.

Money can also be made available for the purchase of milk either by cutting down expenditure other than food or by reducing the consumption of meat and luxury foods which are relatively expensive. The educational campaign necessary to bring about this result can be carried out by taking advantage of the organised grouping of the population which already exists as part of the social system.

Children may be approached through the clinics and visiting nurses or through the schools. Adults may be approached

7. K. A. H. Murray: *Milk Consumption*.

8. E. P. Cathcart and A. M. T. Murray: *A Dietary Survey in Terms of the Actual Foodstuffs Consumed*.

9. Report of Farquhar Thomson lecture, Aberdeen Press and Journal, 14th December, 1936.

10. Prof. V. H. Mottram: Chart issued by National Milk Publicity Council.

in factories, workshops, offices and mines, or through one of the organisations of which they are members as, for example, Church meetings, Temperance meetings, Women's Institutes, Townswomen's Guilds, Political meetings, Business Circles, Rotary Clubs, Psoroptomists and Co-operative Guilds, or through the medium of Gas and Electricity companies.

At this juncture, it is desirable to emphasise the value of oral publicity. Many works on advertising stress the value of printed matter and present other forms of publicity in rather a negative way. It cannot be denied, however, that oratory has played a prominent part in most great economic and social changes. Generally these changes have been brought about by using a combination of speech and writing.

The greatest Teacher of all did not write a book, but in the Old Testament it is recorded that two tables of testimony made of stone and written by the finger of God were given to Moses, and in the book of Daniel there is a description of the writing on the wall. Also, the only record of Jesus' writing in the New Testament is in the book of John—"But Jesus stooped down and with his finger wrote on the ground." The direction given to the Disciples was "To go out into the world and preach the gospel."

It is noteworthy that although many reformers were great scribes, many are remembered by their powers of oratory--Demosthenes, Cicero, Socrates, Plato, Aristotle, Martin Luther, John Calvin, John Wesley, Richard Sheridan, William Pitt, W. E. Gladstone, Benjamin Disraeli. These men achieved their objects mainly by the speeches they made. Hitler, in bringing about the revolution in Germany, started his campaign by making speeches in public halls and in time controlled the press. Mussolini, in Italy, spoke to numerous audiences in public places, and, although for some time he controlled the Italian newspaper known as "Il Popolo," he recognised the value of the public platform. In Turkey, Mustapha Kemal was known to make speeches of several hours' duration.

The spoken word is recognised to-day as one of the greatest influences in teaching in Schools, Colleges, Universities and Churches and in the conducting of political campaigns.

A large section of the adult community is not associated with organisations made up of numerically strong units, but almost solely with family units or else their association is casual. They may, for example, attend meetings of a social or religious nature. It follows that the roundsmen or other representatives who visit the homes of the people should be thoroughly well versed in salesmanship, and a complete advertising campaign

must deal with this aspect of the problem, providing literature for distribution and giving attention to instruction in salesmanship of producer-retailers and roundsmen. Educational propaganda carried out by correspondence and by interviews has already resulted in the establishment of milk services in schools, mines, offices and factories, and in certain units of the army, navy and air force, and in H.M. dockyards. The dissemination of knowledge through casual collections of people at cinemas, cooking demonstrations and lectures and at milk weeks and exhibitions, has resulted in an increased demand for milk both inside and outside of the home.

The effect of advertisements undertaken by advertising agents is not so clear. Milk advertisements are not easily keyed as there is no possibility of freely distributing samples of the product. A keyed advertisement may take the form of the offer of a milk recipe book, and it is well known that such methods bring responses. The mere fact that the amount of money spent on advertising¹¹ has been calculated to be in the region of £100,000,000 per annum is some indication of the confidence of advertisers, and it might fairly be assumed that if such campaigns are successful in promoting sales generally, they might be of some use in promoting milk sales. Advertising of this nature must be of use in suggesting to the public that milk is good and it may possibly have a considerable, though incalculable, influence. In assessing the value of a campaign, it should be borne in mind that the object may be partly to sustain sales at an economic level and partly to raise sales levels. One of the results of constant advertising in the milk industry has been to alter the general tone of the press. Reference to newspapers printed ten years ago cannot fail to bring to light numerous scare headlines, while to-day such are the exception rather than the rule. The index figures of agricultural produce and the cost of living figures produced by the Ministry of Labour¹² should be studied in their relation to milk publicity, as the effect cannot be measured accurately by comparing gallonage disposed of from year to year. The ultimate criterion is the profit to, and the stability of, the industry.

Producers and distributors have so far shown a certain timidity regarding the allocation of funds for advertising probably because the industry is old-established, a production price and a retail price having been arranged with the object of showing a profit to individuals. A new manufacturing enterprise, on the other hand, might commence selling a product below cost and rely on the quality of the product and advertising to increase the turnover so that production costs might be

11. H. W. Houghton (Gregg): *Salesmanship and Advertising*.

12. *Ministry of Labour Gazette*.

lowered to a profit-making point. This would be the bold method and would, of course, depend for its success, partly on the availability of capital to tide the fledgling over its first stage and partly on the degree of success of the advertising campaign. The milk industry is already selling milk below the cost of production for manufacturing purposes, but the burden is being thrown on to the consumer of liquid milk at a time when every authority on health is adjuring him to drink or use more of it. The obvious remedy is to get rid of this incubus or reduce its influence. The price of milk is not necessarily too high. Its production entails a drain on the mineral resources of the land, and the desire of medical authorities and the public to ensure a clean and safe supply would tend to outweigh the advantage of any slight price reduction.

As a protective food it is relatively cheap and the fact can be brought home to the people by advertising. So great is the importance of milk in the eyes of dieticians that the Ministry of Health's Advisory Committee¹³ on Nutrition stated that they regarded the consumption of a sufficient quantity as the key to proper nutrition. Finance in the milk industry is no longer the individual problem which it has been. Receipts are pooled and the financial welfare of the pool is the important factor. Every gallon of milk diverted from manufacture at uneconomic rates means a double gain, cutting the loss on production and the loss of profit.

The amount of money which should be available for publicity annually could only be ascertained by long term results. Up to the present, advertising has paid if estimated by the increased turnover resulting from milk in schools, milk in industry and milk bars, which sales are direct and estimable. The results obtained by certain large manufacturers have established such confidence in publicity that their advertising allocation amounts to hundreds of thousands of pounds annually.

The total value of the milk industry's turnover has been estimated to be in the region of £70,000,000 and an allocation of $\frac{1}{2}$ per cent. would produce £350,000, which is approximately four times the sum at present spent on national advertising.

The present campaign covers a limited press and poster service operated by advertising agents and an educational campaign operated by the National Milk Publicity Council covering interviews, lectures, cooking demonstrations, film displays, and exhibitions, and affording close liaison with various organisations including schools, factories, offices, workshops, mines, and

13. Advisory Committee on Nutrition. First Report.

housewives, a liaison which is so close that the Council's organisers are frequently embarrassed for lack of funds in their co-operation with the many authorities with whom they are invited to work.

That there is scope for an increased consumption of milk can best be realised by comparing the *per capita* consumption of liquid milk with the amounts consumed in other countries which enjoy similar facilities for the development of fine dairy herds. At the same time, it should be realised that the amount of milk consumed in all forms as milk and milk products is relatively high.

It has already been pointed out that the greatest prospect for increased milk consumption is in the homes of the people where, Dr. K. A. H. Murray¹⁴ has informed us, milk is used either raw, or in drinks made mainly with milk, or as an addition to tea and coffee or in cooking. However much the mother of a family may appreciate the value of milk, her problem is to get the family to consume it. Eventually this becomes a culinary problem and she must possess a knowledge of those dishes which absorb large quantities of milk and at the same time retain their palatability. It is by no means impossible to incorporate forty pints of milk a week into the meals of a family of four without incurring an expenditure of more than £2 for food and at the same time to make the dishes attractive. Certain milk dishes such as rice puddings, junkets and milk jellies will absorb 90 per cent. of milk, while at the other end of the scale comes flour confectionery, which will not ordinarily absorb more than 20 per cent. with, however, the exception of milk bread, pancakes and some kinds of scones.

A milk advertising or publicity campaign must, of course, take full consideration of seasonable dishes and natural fluctuations in demand. In the beginning of the year, children go back to school and encouragement should be given to them to take their one-third pint bottles of milk. At this time there may be spells of foggy and cold weather when hot drinks and milk soups are acceptable. On Shrove Tuesday, milk is in demand for pancakes. At mid-Lent, the custom of Mothering Sunday is observed when custards are commonly eaten. On Good Friday, and to some extent on other Fridays, fish is *de rigueur*, and possibly a white milk sauce with the fish. After Easter, early vegetables are available and rhubarb with milk or cream. May is the junket month and early summer brings in the fresh fruits with cream and a desire for cold dishes with milk jellies and blanchmange, and so on. These variations call for special instructions to salesmen and special literature.

14. K. A. H. Murray: *Milk Consumption*.

Too much emphasis cannot be laid on the fact that there is a vast army of producer-retailers and roundsmen, each one a potential advertiser in close contact with the consumers he serves, and, who, by application and co-operation in a well-planned publicity campaign, could make the British dairy farming industry the most prosperous in the world.

It has already been indicated that the necessary advertising allotment for an industry with a turnover of £70,000,000 dealing with a primary commodity such as milk can only be assessed by long experience.

However, in a particularly well-informed article in the "Encyclopædia Britannica," it is suggested that in order to make a commanding appeal in the press in Great Britain and Northern Ireland, a sum of £150,000 would be required annually, whilst a representative showing of posters, including the production of the posters themselves and the hire of the necessary hoardings, would cost £60,000.

A third medium commonly employed is the display of bills on stations, platforms, lifts, trains, buses and street cars, which can be loosely described as conveyance advertising.

The advertising film is quickly becoming recognised as a powerful factor in the advertising world, and the technique of production has so improved that advertising and good entertainment go hand in hand. It is estimated that approximately £20,000 could be apportioned to bills and film propaganda.

The first allocation should be apportioned for the most part for educational purposes such as the development of the Milk in Schools scheme, industrial schemes, including the proper use of milk in industrial canteens, "Milk Weeks," exhibitions, films, lectures, cooking demonstrations, and the production of an adequate supply of literature for distribution by retailers and for co-operation with Public Health Authorities.

No advertising plan could be complete without taking into account the provision of facilities for the distribution of the advertised commodity in the regions where the publicity takes place; of the quality of the product concerned and of the packages which contain it, and it is a pleasure to record the tremendous advances which have been made in these directions during the last decade.

BODY MEASUREMENTS OF FIRST PRIZE WINNING ANIMALS AT THE B.D.F.A. DAIRY SHOW, 1938.

BY S. BARTLETT, M.C., PH.D., B.Sc.

Records of type, size and production of representative animals exhibited at the London Dairy Show were collected at each of the ten Shows, 1928 to 1937. The numerous changes associated with the transference of the Show from the Agricultural Hall to Earls Court, and other reasons, necessitated the curtailment of these records at the 1938 Show. It was found possible, however, to obtain body measurements, and these were collected in the same manner as during the preceding ten years. The results are given in the accompanying table.

The method of selecting the animals was the same as in previous years, viz., the first prize winners by Inspection and in the Milking Trials in the mature cow class of each breed.

Details of the method of taking each measurement were published in this Journal, Vol. XLI, pp. 123 to 140, and Vol. L, pp. 55 to 69.

**BODY MEASUREMENTS OF FIRST PRIZE WINNERS, LONDON DAIRY SHOW, 1938.
TAKEN ON 28TH SEPTEMBER, 1938.**

Class.	Breed.	Catalogue Number.	Name of Cow.	1st Prize Inspection or M.T.	Age when measured.	No. of days since last calving.	Live weight.	BODY MEASUREMENTS IN INCHES.											Length of Body.	(a) Length of Hindquarters.	(c) Height at Withers.	(d) Height at Hooks.	(e) Depth of Chest.	(f) Width of Chest.	(g) Width of Hooks.	(h) Width of Thumbs.	(i) Girth of Barrel.	(j) Girth behind Shoulder.	(m) Girth of Foreleg.	(n) Length of Head.	Width of Head.
								(a) Length of Body.	(b) Length of Hindquarters.	(c) Height at Withers.	(d) Height at Hooks.	(e) Depth of Chest.	(f) Width of Chest.	(g) Width of Hooks.	(h) Width of Thumbs.	(i) Girth of Barrel.	(j) Girth behind Shoulder.	(m) Girth of Foreleg.														(n) Length of Head.	Width of Head.
1	Dairy Shorthorn (Pedigree)	9	Erieth Tiny 4th ...	M.T.	6 1	11	1,469	60.2	19.6	53.4	53.8	30.6	19.0	24.2	20.5	97.6	80.5	7.2	20.0	9.3											
1	"	15	Whitingslow Podger ...	Insp.	5 6	60	1,403	58.6	19.9	51.3	52.6	20.6	18.6	23.3	20.3	95.3	78.7	6.8	19.8	8.8											
4	Dairy Shorthorn (Non-pedigree)	51	Lady ...	Insp.	4 6	13	1,534	59.5	20.6	52.2	54.6	30.0	20.9	25.2	22.5	100.0	81.0	7.5 & 7.6	21.2	8.9											
6	"	52	Bowditch Charm 24th ...	M.T.	4 1	32	1,406	60.4	19.7	53.6	54.7	20.1	18.2	23.4	20.9	91.8	78.1	7.2 & 7.3	20.1	8.8											
6	"	56	Histon Fanny 8th ...	M.T.	7 10	11	1,485	61.6	20.1	54.7	54.0	31.0	18.9	23.2	21.5	92.7	80.7	7.4 & 7.1	19.9	8.7											
8	British Friesian	66	Lavenham Cactus 27th	Insp.	7 11	38	1,430	59.5	19.8	53.2	54.1	31.3	16.6	23.3	20.9	95.0	70.5	7.1 & 7.4	21.0	8.9											
8	"	68	Lavenham Annie 41st	M.T.	5 2	20	1,378	60.3	20.1	53.8	54.5	20.8	16.1	23.0	21.0	89.0	76.6	7.2	20.8	8.6											
11	South Devon	98	Diptford Downs Milkmaid 13th ...	Insp.	8 6	27	1,629	62.6	21.5	56.8	58.8	31.3	19.0	23.3	21.2	98.0	81.0	7.4 & 7.6	21.3	9.2											
15	Red Poll	116	Downfield Grishla ...	Insp.	9 1	32	1,365	55.2	18.6	50.6	50.7	20.3	19.5	23.2	19.7	97.0	78.4	6.8 & 6.9	18.7	8.8											
15	"	118	Parham Minchaba ...	M.T.	5 5	15	1,212	55.0	18.7	50.8	50.9	28.6	17.9	22.4	18.8	85.7	76.0	6.6 & 6.7	19.2	8.9											
19	Ayrshire	130	Broomlands Bloom ...	M.T.	8 1	15	1,235	59.3	19.3	53.0	53.4	30.0	15.9	23.1	20.0	92.0	74.8	7.3	20.1	9.0											
19	"	132	Rottonrow Kitty ...	Insp.	6 6	18	1,084	55.3	18.1	48.8	48.7	28.3	16.2	22.0	19.0	87.5	72.3	6.5 & 6.6	19.1	8.7											
22	Guernsey	173	Bella's Cora 41b of Jos Jetties	M.T.	6 6	17	1,070	54.2	19.0	50.9	51.7	28.6	15.3	20.6	17.6	87.7	71.5	6.1	20.0	8.5											
22	"	175	Rosey of Goodstone 64th	Insp.	6 0	16	1,116	56.6	19.4	51.8	52.0	20.2	14.5	21.5	18.1	90.8	71.5	6.3	20.2	8.2											
25	Jersey	200	La Sente's Lady	Insp.	5 7	59	886	54.8	17.0	48.6	47.2	26.1	13.1	10.4	16.5	83.7	65.4	5.9 & 6.0	16.5	8.0											
25	"	229	Peacocks Eden 10th	M.T.	7 3	26	1,077	56.0	18.7	40.4	49.2	27.8	15.4	20.1	17.1	91.0	70.4	6.3	17.7	8.2											
30	Dexter	276	Crocus ...	Insp.	6 4	123	657	44.8	14.9	30.9	40.9	23.2	14.0	17.4	15.8	74.7	59.3	5.9	17.2	8.0											
30	"	277	Grinstead Trixie 4th ...	M.T.	4 2	27	660	45.3	15.2	40.7	41.0	23.7	14.0	16.6	15.1	72.8	61.0	5.7	17.0	8.1											

ANNUAL REPORT OF THE CONSULTING CHEMIST.

BY T. J. DRAKELEY, D.Sc., Ph.D., F.I.C., F.I.R.I., F.C.S.

During the year 1938, the samples submitted by the members for examination and analysis have been mainly samples for routine testing and the results obtained call for no special comment in this report. A few samples of milk were below the Government minimum standard either for fat or for solids-not-fat content, but they were not more numerous than usual.

There has, however, been a marked increase in the number of samples of soil sent in for examination. In general, it may be said that the soil samples suffered from staleness and had become appreciably acid in character. Every sample showed a deficiency in lime, and it would appear from these analyses that, although the soils come from widely distant counties and were of vastly different characters, they would, in general, benefit by heavy liming.

Samples of feeding stuffs proved satisfactory.

THE DAIRY SHOW OF 1938.

By SIDNEY EDWARDS.

At the Council Meeting held in December, 1937, it was decided to hold the Association's Diamond Jubilee Dairy Show at the newly constructed exhibition building at Earls Court, during the period commencing 19th September and ending on 2nd October. Visitors were admitted on Monday, 26th September, and three following days.

On the opening day His Royal Highness the Duke of Kent paid an informal visit to the Show. In the absence of the President, Major Miller Mundy, who was unwell, His Royal Highness was escorted around the Show by Lord Eltisley and Sir Joseph Q. Lamb, M.P.

Lord Eltisley also attended on Tuesday afternoon and presented the "Bledisloe" Trophy, won by the Friesian team, to the President (Mrs. Gerald Strutt) of the British Friesian Cattle Society, also the "Lonsdale" Trophy and the Ayrshire Agricultural Association's Challenge Trophy to the successful cheesemakers.

The Supreme Challenge Trophy was presented on Wednesday afternoon by Miss Miller Mundy to the owner of the Jersey cow "Pearcelands Eileen 10th," Mr. J. W. McCallum, Chesham, Bucks.

Miss Miller Mundy also presented the "Desborough" Cup to the champion butter-maker and the "Daily Mail" Bowl to the champion junket-maker.

CATTLE.

The centre of the ground floor was reserved for judging rings and cattle stalls and all cows and heifers were in their places by 10 p.m. on Friday, 23rd September. When judging was in progress a very fine view could be got from the gallery. For the first time every cow or heifer admitted to the Show had passed the tuberculin test, and, because of this requirement, many visitors expected to see the cattle numbers running consecutively. Unfortunately, this arrangement was not permissible because cattle from attested herds had to be stalled together, those from tuberculin-tested herds in another group, and animals that had passed the test within two months prior to the Show made a third group.

The Milking Trials and Butter Test awards were made on the milk yield of 24 hours, ending mid-day on Sunday. This new departure allowed more time for the preparation of animals for inspection judging on Monday.

The opening of the Show on Monday was necessary to allow time after the close of the Show for the removal of exhibits.

It is hoped that the experience gained in 1938 will permit of a reversion in 1939 to the practice of opening the Show to the public on Tuesday.

The judging of the animals commenced at 9.30 a.m. in spacious rings, formed with chairs which visitors were able to use, and was completed in good time. The change of venue required that the Show should be held some three weeks earlier than usual, and exhibitors were unable to make the normal arrangements for their cows to calve at a suitable date for the Show. This accounted for lack of numbers in a few classes.

Dairy Shorthorns were about the usual standard seen in London. The leader of the mature cow class was an outstanding animal, very stylish on parade and gave a yield of close on seven gallons in the trials. Her owner, Mr. Joseph Barnes, was awarded the "Calvert" Challenge Cup for the best Pedigree Dairy Shorthorn, cow or heifer, upon inspection only. The second was a roomy cow with a good udder but lacked the style of the winner. The third prize animal, a good framed and stylish cow, was first in the Milking Trials, and was awarded the "Desborough" Cup.

Eleven animals paraded in the young cow class and provided an even contest.

Dairy Shorthorn heifers were not quite up to Dairy Show standard.

Dairy Shorthorns not eligible for Classes 1 and 2 were a small entry of four with good udders and yields. The class for heifers was cancelled owing to lack of entries.

The "Thornton" Cup was won by the President, Major Miller Mundy, with a well-matched trio of cows.

Lincolnshire Red Shorthorns were up to standard. The winning cow was a grand type with a shapely udder. The second prize animal had not the type of the leader and failed a little in her forequarters. The remaining animals were more than useful. The class for heifers lacked entries and was cancelled.

British Friesians had an entry of 40 animals in three classes. Two grand cows headed the senior class, the winner, "Lavenham Cactus 27th," being nearer the ground and hence to the modern type of the breed. The milky matrons that stood third and fourth lacked the splendid bodies of the leaders.

Absentees spoiled the young cow class, but those present had very attractive udders.

The heifers were scarcely of the same standard as the cows, although the winner was outstanding.

South Devons were few in numbers and the tendency was towards a smaller and neater type of animal. The heifer class was cancelled owing to lack of entries.

The class for Devon Cows did not attract an entry.

Red Polls born previous to August, 1933, were an entry of 12, all but one appeared before the judge. The winning animal had a capacious udder of correct shape and gave a yield of nearly seven gallons. Of the four young cows entered, two only paraded, of nice quality. The heifers were more numerous and very attractive.

The class for Welsh cows was cancelled.

The Ayrshire classes were hardly up to the standard of former years. The leaders in the senior class were big-bodied cows on short legs, that looked like wearing a good number of years. The young cows were rather mixed, of uneven type, but the winner was a real Dairy Show cow. The heifer class was only fair but included an outstanding winner that was, perhaps, the best Ayrshire animal in the Show.

Guernseys were undoubtedly the best and most level exhibited at the Dairy Show for some years. The animals in the senior cow class were of excellent quality.

The eight young cows were a really good class but not of the excellence of the seniors.

The seven heifers were excellent animals, full of merit and completely representative of the bred.

Jerseys were a very strong section. The mature cow class was an extremely good one, and, in the opinion of the judge, better than is often seen in the Island. Later in the week one of the animals won for her owner the Supreme Championship Award.

The class for cows born after August, 1933, had many beautiful animals. The heifers were of excellent type and would be a credit to any show.

The Kerry classes were cancelled owing to lack of support.

The Dexter cow class got five entries and all were forward. The leader carried a good square vessel with well-placed teats. The second was a good type with a good bag.

Classes for in-calf cows and heifers were added to the classification this year to enable breeders who had prepared for an October Show to exhibit their animals. The Council realized that those classes might contribute to an increase of numbers in that section, and calving boxes were prepared. During the later days of the Show new-born calves were on view.

The in-calf cows and heifers were judged on Tuesday morning. The judges report favourably on the quality of the exhibits.

THE "BLEDISLOE" CHALLENGE TROPHY.

Six teams competed for the Trophy, parading before Mr. A. Weightman in a spacious ring on the centre of the main floor, so arranged that judging could be followed from the gallery on the first floor. The Ayrshire team was awarded full points for inspection, British Friesians following with 50 points less. The final figures of performance and inspection placed the Friesians on top with a lead of 26 points over the Ayrshire team.

SUPREME INDIVIDUAL CHALLENGE TROPHY.

Fourteen animals competed for the Supreme Trophy representing seven breeds and constituted the best display of good cows ever seen in this competition. The placings were entrusted to Mr. W. Nixon, whose points ranged from the maximum of 125 to 60.

At the top of the line was placed the Shorthorn that was winner of the "Calvert" Cup with maximum points, followed by the Ayrshire that was Supreme Champion last year, with 120 points. Third in the line stood Mr. J. W. McCallum's Jersey cow that gained 110 points, which, when added to the points gained in the Milking Trials and Butter Tests, made a total of 354.78, and won for her owner the coveted honour. Reserve position was gained by Mr. Wheeler's Shorthorn that was awarded the same points on inspection and had a total of 348.53.

GOATS.

Entries in the Goat section far exceeded those of former years. The general standard was high and there were few animals of little merit. Judging of the well-filled classes, and for the numerous cups and trophies, took the whole day. The section was one of the features of the Show.

CHEESE.

The Cheese exhibits were staged on the first floor in the area set apart for produce. Entries were well maintained and exhibits were given ample space.

Stiltons were a fair entry of moderate quality.

The standard of quality in some of the Cheddar classes was scarcely up to expectation; many of the cheese lacked body and were not quite clean in flavour; these faults were probably due to the unfavourable weather conditions of the past season. The prize lots were very good and the makers did well to overcome their difficulties.

Cheddar cheeses produced in the British Empire (Overseas) were of choice flavour and body.

The Cheshire cheese classes were well supported. With the exception of the prizewinners the quality was not of the standard expected at the Dairy Show. Many of the exhibits in the Long-keeping class were much too ripe.

Several lots in the National Mark class did not reach the standard required.

Mr. J. N. Bourne, Cheshire, was awarded the "Lonsdale" Trophy for the best exhibit of cheese made in England, Scotland or Wales. His exhibit was also awarded the "Bland" Challenge Cup for the best exhibit of Cheshire cheese.

Ayrshire Dunlops were of a very high standard, the first three lots being of outstanding flavour and texture. The exhibitor of the first prize lot also secured the Ayrshire Agricultural Association's Challenge Trophy for the best exhibit made in Scotland.

Leicesters were strong in flavour and a number discoloured.

Lancashire cheese were of high quality; some were soft due to the high temperature of the hall. The Long-keeping cheese were excellent in flavour and texture.

Derby cheese provided a small class of six entries. The first and second prize lots were good. Most of the others were strong in flavour.

Double and Single Gloster were small classes of seven and six exhibits. Those awarded prizes were good; some of the entries were weak in texture and off flavour.

Caerphilly cheese did not reach a high standard; a number of the entries were too soft, and a few were not of the correct size and shape.

The class for Small Hard-Pressed cheese had 29 entries and, with very few exceptions, were of good quality; the appearance and finish were excellent.

Small Hard-Pressed cheese not exceeding 2 lbs. each, quick ripening, provided exhibits which, with the exception of the prize winners, were disappointing.

Small Hard-Pressed cheese, quick ripening, not exceeding 8 lbs., were, generally speaking, of good quality and finish, but had not been able to stand the high temperature of the hall; some of them were leaking whey rather badly.

Five counties competed in the Inter-County competition. The leading exhibits were of outstanding quality, appearance and finish.

Sweet Cream cheese. Owing to the high temperature the cheese were in a very soft and greasy condition. The packing was good with one or two exceptions.

Unripened soft cheese were disappointing.

PARTICULARS OF BACON PIG

Catalogue Number.	Exhibitor's Name.	Breed.	Average Age.		Average Dead Weight.		Live Weight.	Dead Weight.	Percentage Loss Live Weight to Dead Weight.
			Mths.	Days.	lbs.	lbs.	lbs.	lbs.	
CLASS 114.—Four Pigs—pure-bred.									
1141	Earl of Radnor ...	Large White ...	7	6	151.0	805	604	24.9	
1143	St. Luke's Hospital ...	Large White ...	6	21	151.7	782	607	22.4	
1146	W. T. Vint ...	Welsh ...	7	23	155.5	819	622	24.1	
1147	F. A. Curry ...	Large White ...	6	16	157.7	815	631	22.6	
1148	J. C. Wilkerson ...	Large White ...	6	16	145.7	764	583	23.7	
1149	A. E. Law ...	Large White ...	7	10	149.7	787	599	23.9	
1150	H. R. Davidson ...	Large White ...	7	14	148.0	780	592	24.1	
1151	G. Blecher ...	Large White ...	5	24	147.0	783	588	24.9	
1152	Midland Agric. College ...	Large White ...	7	7	155.5	806	622	22.8	
CLASS 115.—Two Pigs—pure-bred.									
1154	Earl of Radnor ...	Large White ...	7	7	151.0	405	302	25.4	
1155	Herts Institute ...	Wessex ...	5	22	152.5	405	305	24.7	
1156	St. Luke's Hospital ...	Large White ...	6	21	150.5	390	301	22.8	
1157	Welsh Pig Society ...	Welsh ...	7	24	155.0	422	310	26.5	
1158	J. P. Morgan ...	Large White ...	6	7	146.0	393	292	25.7	
1159	Mrs. C. Behrens ...	Large White ...	7	6	164.5	419	329	21.4	
1162	F. A. Curry ...	Large White ...	6	16	151.5	402	303	24.6	
1164	J. C. Wilkerson ...	Large White ...	6	16	148.5	390	297	23.8	
1165	W. A. Whiddon ...	Large White ...	7	21	156.0	412	312	24.3	
1166	G. A. Kilmister ...	Large White ...	7	24	165.0	442	330	21.8	
1167	J. R. Major ...	Large White ...	7	24	151.5	390	303	22.3	
1170	J. White ...	Large White ...	6	26	161.0	411	322	21.6	
1173	Midland Agric. College ...	Large White ...	7	13	149.0	390	298	23.6	
1169	C. L. Coxon ...	Large White ...	7	18	145.5	388	291	25.0	
1175	C. L. Coxon ...	Welsh ...	7	18	153.0	390	306	21.5	
CLASS 116.—Two Pigs—first cross.									
1176	T. L. Ward ...	Large White and Large Black ...	5	5	147.5	405	295	27.2	
1177	Miss J. K. B. Little ...	Large White and Large Black ...	7	17	167.0	440	334	24.8	
1178	A. E. Law ...	Large White and Middle White ...	6	2	157.5	406	315	22.2	
1179	H. Goodman ...	Large White and Large Black ...	6	11	139.0	378	278	26.0	
1180	J. White ...	Middle White and Large White ...	7	3	154.5	406	309	23.9	
1181	H. N. Brooking ...	Large White and Nat. Long White Lop-eared ...	6	23	143.0	385	286	25.0	
1182	T. L. Ward ...	Large White and Large Black ...	5	12	149.0	402	298	25.0	
1183	Miss J. K. B. Little ...	Large White and Large Black ...	5	10	144.5	404	289	28.8	
1184	H. Goodman ...	Large White and Long-eared White ...	6	14	142.5	382	285	25.0	
1185	A. E. Law ...	Large White and Middle White ...	6	2	141.0	276	282	25.0	
CLASS 117.—Four Pigs—recorded.									
1186	Herts Institute ...	Large White ...	5	26	148.5	797	594	25.0	
1187	T. L. Ward ...	Large White and Large Black ...	5	5	148.0	790	592	25.0	

* Whitley Cup.

§ Harris Cup.

† Beale Cup.

CLASSES, DAIRY SHOW, 1938.

No.	Bacon Weight.	Percentage Loss Live Weight to Bacon Weight.	Thickness of Back Fat.	Thickness of Streak.	Length for Weight.	Proportion of Cuts.	Reduction of Fat from Shoulder to Gammon.	Proportion of Lean to Fat on Cut Side.	Shape of Gammon.	Quality (Firmness) of Fat.	Firmness of Bone.	Thickness of Hind.	Total.	Fecundity.					Awards.
														Numbers Weaned.	Average Weight at 8 Weeks.	Age for Weight.	Carcass Quality.	Total.	
lbs.	lbs.	15 Pts.	10 Pts.	10 Pts.	10 Pts.	5 Pts.	20 Pts.	5 Pts.	15 Pts.	5 Pts.	5 Pts.	100 Pts.	50 Pts.	50 Pts.	100 Pts.	100 Pts.	300 Pts.		
444	44.8	10	8	8	8	4	16	5	12	4	3	78	—	—	—	—	—	*§ 1st. Res. 3rd. 2nd. V.H.C.	
453	42.1	9	8	8	10	5	20	5	15	5	4	89	—	—	—	—	—		
455	44.4	11	7	8	7	4	16	5	15	5	12	80	—	—	—	—	—		
469	42.5	9	8	9	7	5	18	4	14	4	3	81	—	—	—	—	—		
432	43.5	8	8	9	9	5	17	5	13	5	3	83	—	—	—	—	—		
439	44.2	15	6	8	8	4	17	5	10	4	3	79	—	—	—	—	—		
432	44.6	9	7	9	8	4	19	4	10	3	3	76	—	—	—	—	—		
441	43.7	10	7	8	6	5	19	5	10	3	3	76	—	—	—	—	—		
459	43.1	10	9	9	7	12	16	4	10	3	3	73	—	—	—	—	—		
226	44.2	8	8	8	10	5	20	5	14	4	4	86	—	—	—	—	—	H.C. H.C.	
226	44.2	8	8	9	10	4	17	5	14	5	3	84	—	—	—	—	—		
223	42.8	8	8	8	9	5	20	5	14	5	4	86	—	—	—	—	—		
228	45.9	7	8	8	9	4	20	5	13	5	3	83	—	—	—	—	—		
216	45.0	8	8	8	10	4	18	5	15	5	5	82	—	—	—	—	—	Res. 3rd.	
250	40.3	3	8	8	10	5	20	5	15	5	4	83	—	—	—	—	—		
223	44.5	11	6	8	10	5	20	5	14	5	4	88	—	—	—	—	—		
220	43.6	10	10	7	10	5	20	5	14	5	3	89	—	—	—	—	—		
226	45.6	9	6	6	10	4	19	5	14	4	3	80	—	—	—	—	—	H.C. 2nd. V.H.C. †1st.	
249	41.0	7	10	5	9	5	19	5	14	4	3	81	—	—	—	—	—		
226	42.9	9	8	6	9	5	20	5	15	5	4	86	—	—	—	—	—		
243	40.9	7	9	7	9	4	18	5	14	4	4	81	—	—	—	—	—		
219	43.8	9	10	8	10	5	20	5	15	5	4	91	—	—	—	—	—	Res. **2nd. †1st. 3rd.	
212	45.4	9	9	7	9	5	20	5	15	4	4	87	—	—	—	—	—		
229	41.3	8	9	10	10	5	20	5	15	5	5	92	—	—	—	—	—		
220	45.7	7	7	10	10	5	20	5	14	5	3	86	—	—	—	—	—		
251	42.9	11	10	7	10	5	20	5	14	5	3	90	—	—	—	—	—	H.C. H.C. V.H.C.	
8	41.9	12	10	8	10	5	20	5	13	5	3	91	—	—	—	—	—		
9	44.7	7	7	10	9	5	20	5	15	5	4	87	—	—	—	—	—		
1	43.1	10	8	7	9	4	16	5	14	5	4	82	—	—	—	—	—		
0	45.5	10	8	9	8	5	18	4	15	4	3	84	—	—	—	—	—	H.C. H.C. V.H.C.	
3	44.5	7	7	8	8	5	19	4	14	5	4	81	—	—	—	—	—		
1	47.8	9	7	9	8	5	20	4	13	5	3	83	—	—	—	—	—		
3	44.2	7	8	10	8	5	19	5	15	5	3	85	—	—	—	—	—		
7	44.9	11	9	8	7	3	14	4	13	5	3	77	—	—	—	—	—	1st Class. 1st Class.	
4	45.2	8	7	9	9	5	19	5	15	5	4	86	50	41	85	86	262		
4	44.6	8	8	9	9	4	16	5	14	5	5	83	50	50	100	83	283		

† Bledisloe Cup.

|| Pig Recording Cup.

** Wills Cup.

BACON AND HAMS.

A modification of the conditions governing the entries in the Bacon sections accounted for a greatly increased entry and fewer disqualifications at the factory. With the additional space available for staging, the exhibit, as a whole, compared most favourably with those of previous years.

The entry of four Large White pigs from St. Luke's Hospital, Middlesbrough, won the "Whitley" Cup and the "Harris" Cup for the four best sides of Wiltshire bacon in any one entry in Classes 114, 115, 116 or 117.

The "Beale" Cup for two Pedigree Bacon pigs was awarded to Mr. C. L. Coxon's exhibit of Welsh pigs that scored 92 points. Mr. A. E. Law was awarded the "Bledisloe" Cup for first-cross pigs with a Large White×Middle White exhibit that earned 91 points. Second place was awarded Miss. J. K. B. Little's entry of Large White×Large Black pigs that also secured the "Wills" Cup for the best exhibit of that cross.

For the fifth time Mr. T. L. Ward has won the Pig Recording Challenge Cup with his popular Large White×Large Blacks.

The bacon, with very few exceptions, was of a high standard.

The class for Bacon produced in the British Empire (Overseas) had 18 entries of excellent quality. With one exception the exhibits were Canadian, the other being from New Zealand. The Silver Medal was won by Canada Packers, Ltd., Toronto Factory.

The exhibits of Ham were of a high standard of excellence.

BUTTER.

The 2-lb. classes were a moderate entry, generally speaking, of good flavour. Texture suffered owing to the weather conditions; colour, on the whole, was good.

The commercial classes were well filled with butter of a high standard, which made judging difficult.

Salted Butter, not less than 56 lbs., produced in the Empire (Overseas), was very regular, and none of the entries could be graded below first quality. The heat made it difficult to judge the texture. Unsalted butter, with few exceptions, was of a very high standard.

CREAM.

Clotted cream exhibits from Wholesale creameries were of moderate flavour and texture. The prize-winning exhibits of pasteurised cream were exceptionally good, of even consistency and creamy flavour.

Clotted cream, other than from Wholesale creameries, had 13 entries, six of which were good samples. The class for cream other than clotted was disappointing: some of the exhibits were sour and there were a few absentees. The winning lots were of good flavour, colour and consistency.

BOTTLED FRUIT, VEGETABLES AND JAM.

The dearth of fruit during the season (1938) had a marked effect on the number of entries. The general quality of the exhibits was good, beautifully packed and displayed.

HONEY.

The exhibits were not so numerous as one could have wished, probably owing to the indifferent season. The displays of Honey were very good, especially the first prize lot.

JUNKET-MAKING CONTESTS.

The competitors were keen in each section, the prize winners worked methodically and their curds were excellent. A Devonshire competitor, Miss W. M. Sweetland, was the winner of the Championship Contest and the "Daily Mail" Challenge Bowl.

BUTTER-MAKING CONTESTS.

The competitors in the novice classes were somewhat handicapped by the climatic conditions and lacked the experience necessary to produce good results under adverse conditions. In the open classes excellent work was done, there being few points between the prize winners. The Championship and "Dorsetshire" Challenge Cup were awarded to Miss M. Olde, of Boscastle, Cornwall.

MILKERS' CONTESTS.

The Milkers' Contests were a great feature of the Show. The cows were on the main floor and the central judging ring was used for the contests. The competition was very keen, and a Cornish competitor carried off the Championship.

COW JUDGING CONTESTS.

Ten teams from Agricultural Colleges, Farm Institutes or County Councils competed for the Association's Challenge Cup. The only team of girls in the competition, that from Studley Agricultural College, Warwickshire, won the Cup.

HORTICULTURAL SECTION.

A new feature of the Diamond Jubilee Show was the inclusion of a Horticultural section. A large entry of brilliant exhibits were staged and were a delight to visitors.

The Show was undoubtedly the finest ever staged by the British Dairy Farmers' Association, and it was unfortunate that it coincided with the week of the European crisis.

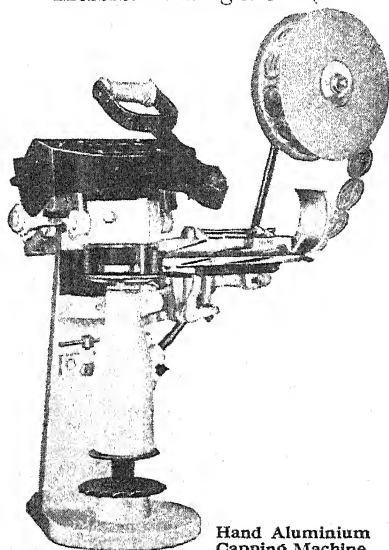
New and Improved Inventions, Dairy Show, 1938.

DAIRY APPLIANCES.

BY PROFESSOR E. CAPSTICK, M.C., M.Sc., N.D.A., N.D.D.

The New and Improved Invention Classes at the 1938 London Dairy Show of the British Dairy Farmers' Association were not quite so well filled as usual, and in the opinion of the judges there was no really outstanding feature displayed either amongst the new inventions, or any distinct advance made in the sterilising outfits entered in the special classes for them. In Class 148, for any new apparatus or invention, there were ten entries, of which only nine were actually available for inspection by the judges.

Messrs. H. King & Son (Dulwich), Ltd., 23, North Cross Road,

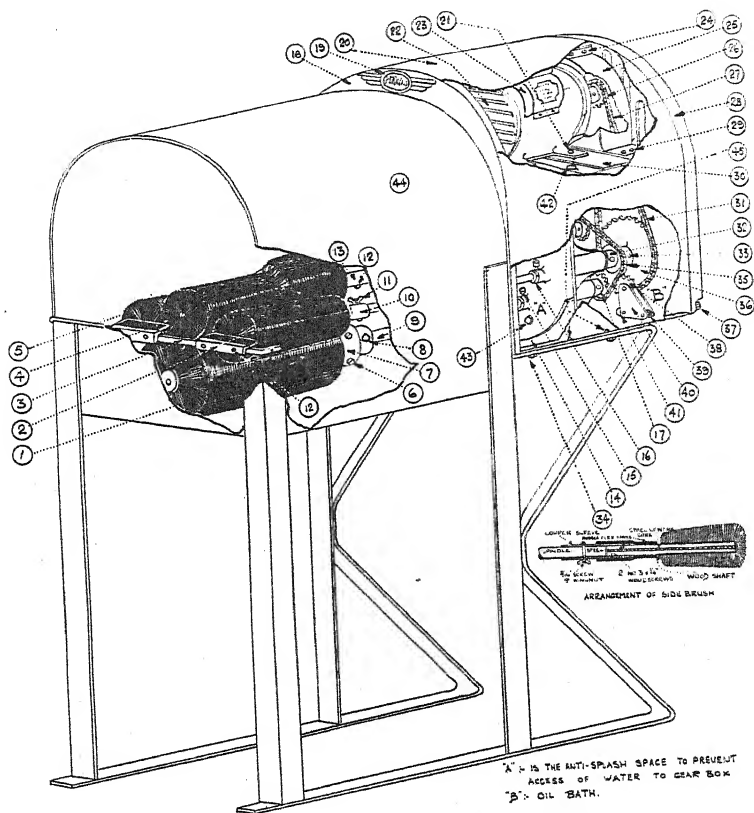


Hand Aluminium
Capping Machine.

E. Dulwich, London, S.E. 22, were awarded a Silver Medal for a Hand Aluminium Capping Machine. The machine was hand actuated, but self-feeding by a continuous band of aluminium. The caps were cut off and formed on the bottle without being touched by hand. For the smaller dairyman the use of this machine would provide considerable savings in cap costs against the method of purchasing formed caps from the manufacturer. In construction the machine was simple, and sturdily built, so that there appeared to be nothing likely to break down or go wrong with the mechanism.

A Silver Medal was also awarded to Perkins Clean Milk Equipment, Ltd., Nottingham Road, Derby, for a Duo Bottle Washing Machine. This machine was an interesting development of the traditional type of small bottle washer, modernised and direct driven electrically. The internal brushes were

supplied with a water feed, which is a distinct advance on previous bottle washing machines of this type.



- | | | |
|--------------------------------|---------------------------------|---------------------------|
| 1 BOTTOM BRUSH. | 4 THROAT COLLAR. | 8 1/4" x 3/8" GRUB SCREWS |
| 2 TYPE "X" END BRUSH | 5 17 TOOTH SPROCKET | 9 TOP BOTTOM SPROCKET |
| 3 1/8" x 8" END OF D" | 6 CAST END P COVER | 10 5/4" x 1" GRUB SCREWS |
| 4 TOP BRUSH | 7 NAME PLATE | 11 5/16" x 1" H.K. SCREWS |
| 5 TYPE BRUSH | 8 GR. SHIELT COVER | 12 BRUSH CHAIN DRIVE |
| 6 100 X 1" WOOD SCREW | 9 5/16" x 3/4" H.K. BOLTS | 13 57 TOOTH PINION |
| 7 BOTTOM BRUSH HOLDER | 10 ELEC. MOTOR | 14 16" x 16" x 9" NUTS |
| 8 1/2" H.K. SCREW | 11 CONNECTION ON MOTOR | 15 JOCKET SPROCKET |
| 9 1/4" DIA. STEEL PINWHL | 12 1/8" x 1/2" R.H. BRASS SCREW | 16 CHAIN - 475 |
| 10 COVER SLUG | 13 CHAIN GUARD | 17 CHAIN - 475 |
| 11 1/2" R.H. SCREW x MOUNTING | 14 17 TOOTH SPROCKET 5" GEAR | 18 CHAIN - 475 |
| 12 1/8" x 3/8" R.H. BOSS SCREW | 15 MOTOR CHAIN DRIVE | 19 CHAIN - 475 |
| 13 BRASS GRUB SCREW | 16 END COVER WITH AX HOLE | 20 CH. FILLER |
| 14 ANGLE CASTING | 17 1/8" x 1/2" BRASS R.H. SCREW | 21 LEVER |
| 15 GRUB NIPPLES | 18 MOTOR BASE PLATE. | 22 WASH. TANK |
| | | 23 WASH. TANK |

" Duo " Bottle Washing Machine.

A Bronze Medal was awarded to Messrs. Young & Co. (Westminster), Ltd., Abbey Road, Merton, London, S.W. 19, for the "Hale" Bull Control and Self-Exercise. The apparatus

consists of a flexible steel wire supported on two posts of varying height, the wire being adjusted by means of screwed eye bolts for small adjustments, or by special clips for larger amounts, either of which can be operated by the simple use of a spanner or screw hammer. Attached to the wire and travelling on it is a spring galvanised chain with a ring at one end and a slip-hook at the other, the former sliding along the wire, and the

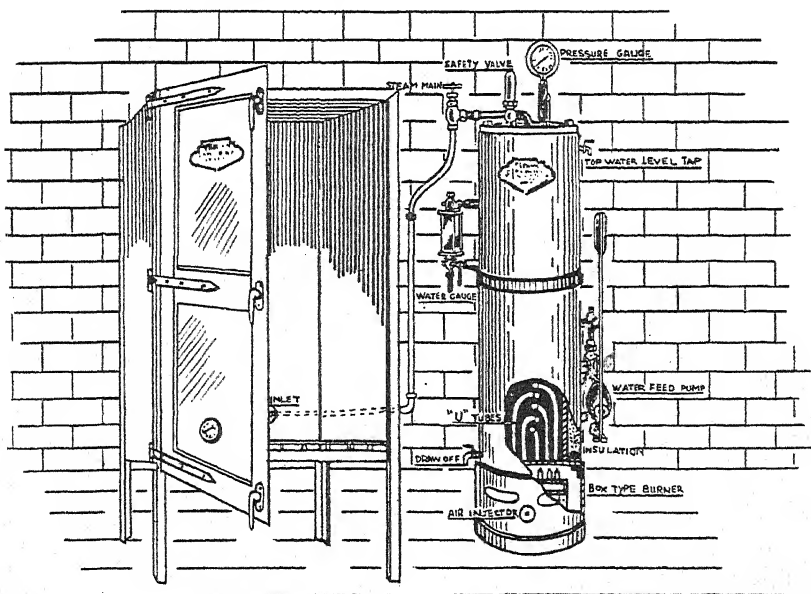


"Hale" Bull Control.

latter attached to the nose ring. This attachment, however, is not all, as in addition to the nose ring, a set of chain harness is passed round the animal's horns and led through the nose ring to the previously mentioned slip-hook depending therefrom. This enables the animal to be tethered up closely to a ring in the wall or pen or some other permanent fixture, for grooming, &c. The arrangement also relieves the bull of the weight of the chain hanging from his nose ring. When inspected, four

bulls of varying temperament were secured by the system, which appeared to work well and gave satisfaction to the attendant. It was noted that the slight play or give associated with the taut steel rope provided an almost perfect anchor for tethering a bull. The freedom from abrupt snatch largely removed all danger of breakages of the tethering chain or bull ring. On the farm where the device was inspected, the Exercisers had been erected so that the bulls could feed and lie down in their house, move rapidly in the yard for exercise, or serve cows in the service pen without unfastening the bull, or the attendant entering the bull pen. Since the bull does not come in contact with certain parts of the bull pen the use of the device makes it possible for these parts to be constructed of medium weight fencing.

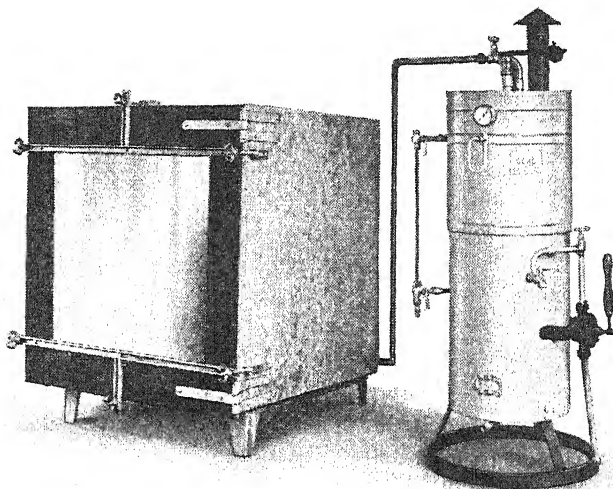
In Class 171 a First Prize and Silver Medal was awarded to Perkins Clean Milk Equipment, Ltd., for their "Paramount" Gas Boiler, with a 3 ft. by 4 ft. by 4 ft. steam chest. The entry proved to be a high pressure boiler of special design, heavily constructed with a bolted-on bottom plate holding ten one-inch U tubes. These tubes return in a cast iron box to a six-inch



"Paramount" Gas Boiler with Steam Chest.

flue. Gas jets are directed through the box by means of a powerful box type Bunsen burner. The makers claim that within 20 minutes of lighting, approximately 30 pounds steam pressure can be raised, and the gas consumption is 120 cubic feet per hour. Under the single test tried 30 pounds pressure was not attained until the boiler had been working 29 minutes, but the owner of the plant which was inspected expressed himself completely satisfied with its performance.

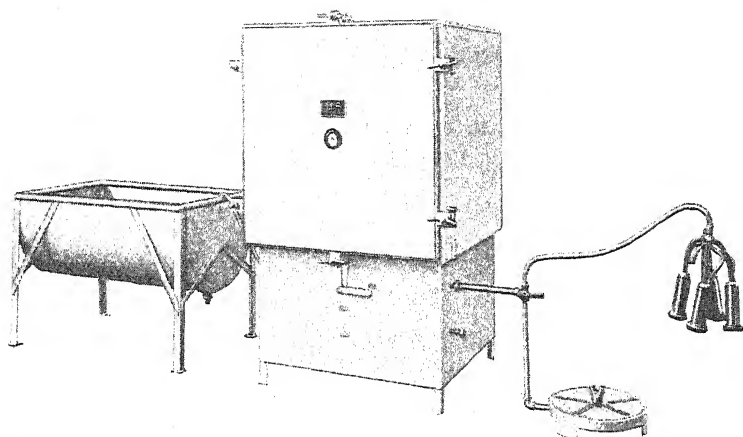
The Second Prize and Bronze Medal was awarded to the Dairy Supply Company, Ltd., Cumberland Avenue, Park Royal, London, N.W. 10, for their "Desco" Gas-Fired 15-lb. Pressure



"Desco" Gas-Fired 15-lb. Pressure Boiler and Steam Chest.

Boiler and Steam Chest. The chest has a capacity of 48 cubic feet, and is of satisfactory design with a wooden frame door fastened by four screw clamps. The chest is not insulated. The boiler is of a non-tubular type working at 15 pounds pressure. The upper part is efficiently insulated, and the lower part is surrounded by the fire box in which the boiler rests. Heating is effected by a large treble aerated gas ring, operated by three jets, built into the specially designed fire box. Under test it took 87 minutes to obtain 10 gallons of hot water, and achieve satisfactory sterilisation, and the gas consumption was estimated at 190 cubic feet. Appreciable saving would be effected by lagging the steam chest of this unit.

In Class 172 the First Prize and Silver Medal was awarded to the General Electric Co., Ltd., Magnet House, Kingsway, London, W.C.2, for their New Improved Electric Dairy Sterilising Chest, with water-heating device and pressure steam jet. The steam generator and the automatically controlled water tank are neatly housed in the same chest in a large box. A three-way lever directs the steam to the chest, hot water or steam

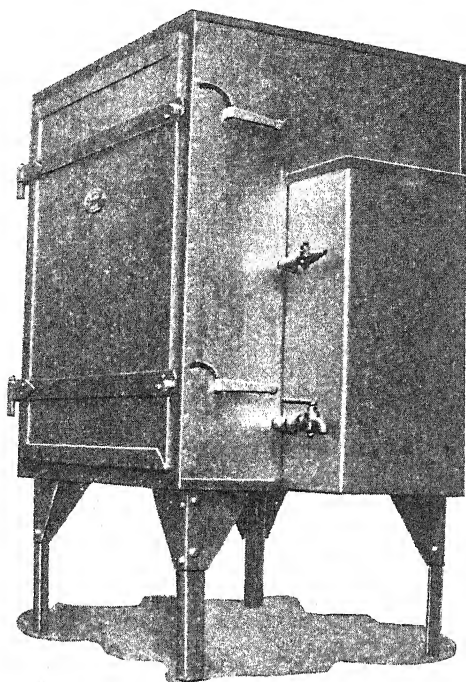


New Improved Electric Sterilising Chest.

jet. In this plant the steam jet is connected to a churn stool and an 8-gallon churn was satisfactorily steamed in two minutes. This jet is a very welcome addition to the usual equipment provided in sterilisers of this type. The whole plant was well constructed, and the steam chest fairly efficiently lagged. Parts of the outside of the door and the chest, however, did warm up slightly during steaming. The door is flanged and closes on a rubber gasket, and is simply but securely held by four swing bolts and wing nuts. An additional and, in the judges' opinion, an important refinement to the plant would be the addition of an automatic cut-out for the heating elements.

The Second Prize and Bronze Medal was awarded to Messrs. J. W. Woolley & Co., Ltd., Two Gates, Tamworth, for their "Clifton" Electric Steriliser. The steriliser is of the combination type, although the steam-raising unit is entirely separate, being mounted on the side of the chest. The boiler or steam generator works at 2-3 pounds pressure, and steam can be turned into the chest or the steam jet provided. The water level during steaming is automatically controlled, and hot water up to five gallons can be readily obtained. The heating elements automatically cut out if the water fails. The sides of the chest, including the

door, are heavily insulated. As the steam generator works under pressure the condensate is allowed to flow to waste. This point might be modified with advantage in future models.



"Clifton" Electric Steriliser.

POULTRY APPLIANCES.

By C. N. GOODE.

The exhibits in the Poultry section were chiefly improvements in laying battery cages, chick brooders and incubators.

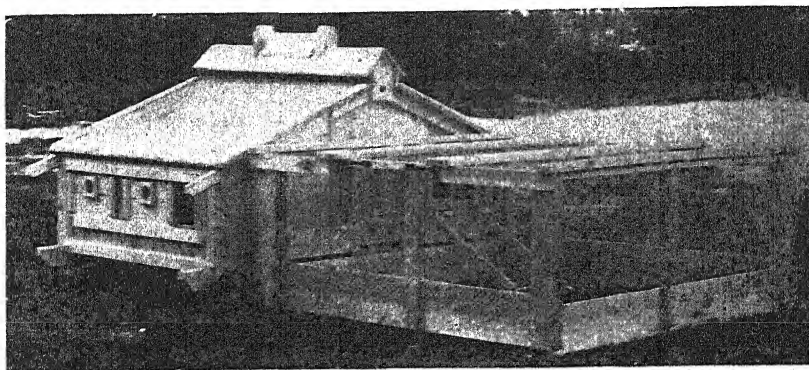
These appliances have come much to the front in recent years to meet the requirements of mass production of chicks that has developed year by year since the introduction of the Mammoth incubator. The demand for day-old chicks has

increased enormously and has brought about a complete change of system in the poultry industry.

The egg producer on a large scale now buys day-old pullet chicks from the hatcheries, thus saving the cost and labour of running breeding stock and buying houses. The day-old cockerel chicks are usually sold for table purposes. The residue that are not sold direct are sold at the various auction marts about the country. How far this system of mass production is responsible for the disease existing among poultry flocks to-day it is difficult to say. Much depends upon the quality of the stock from which the hatcheries draw their supply of eggs. The makers of Mammoth incubators are continually making improvements in their machines to ensure chicks being hatched under the best conditions possible.

This continual development is particularly noticeable in both the Secura and Papworth entries. These firm's exhibits were each awarded a Medal for their improvements.

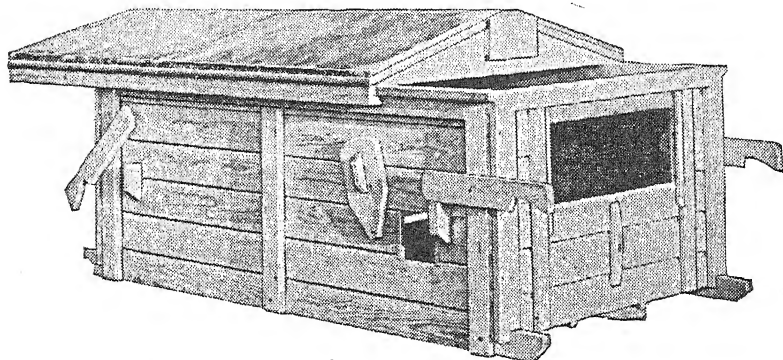
The next important phase in the life of the chick is the brooder in which it is reared. Each year marks some improvement in these, and the McMaster 100-Chick Size Fold Brooder and the Sawyer Manufacturing Co. were each awarded a Bronze Medal for their outdoor brooders.



McMaster Fold Brooder.

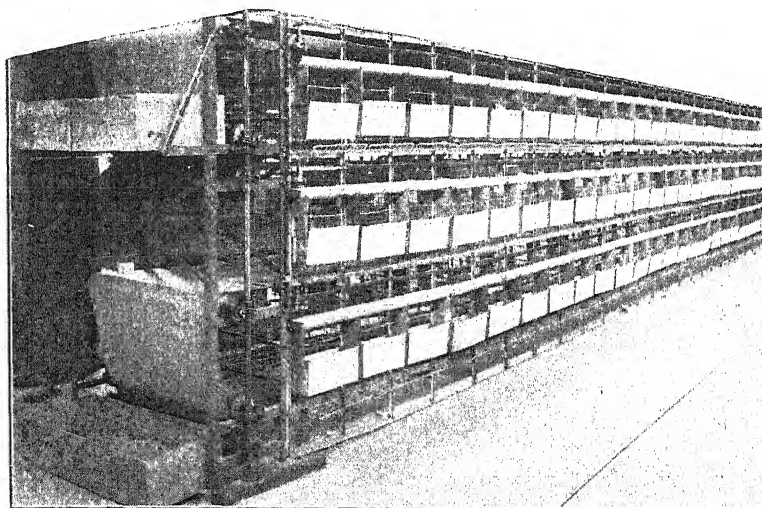
Laying batteries have now become a great feature in egg production. This type of appliance has now passed the initial stage of experiment and is being largely used.

A Silver Medal was awarded to R. J. Patchetts, Ltd., for a very complete single laying battery with an automatic cleaning



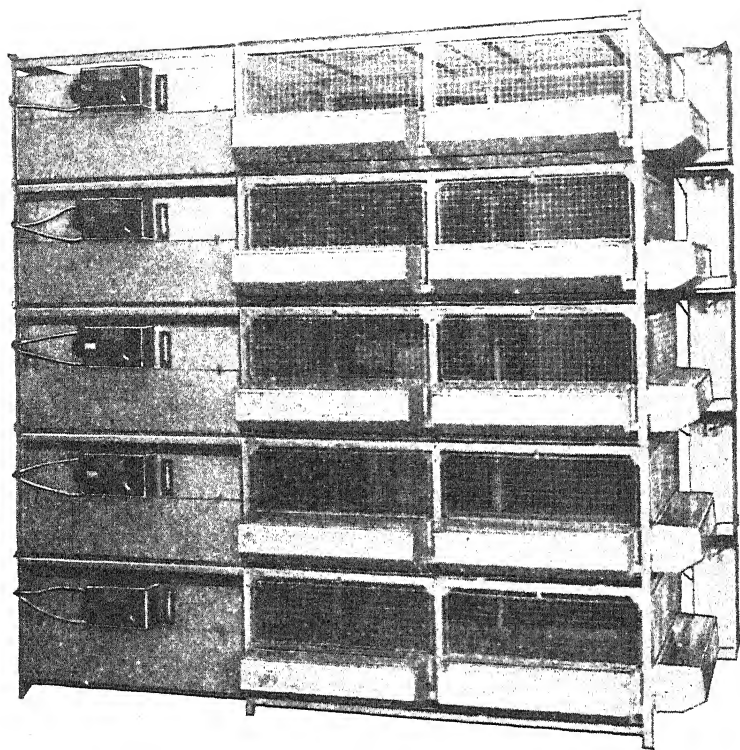
Sawyer Brooder.

device for removing droppings and a truck for collecting eggs, feeding, or carrying manure.



Patchetts' Single Laying Battery.

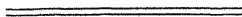
Curfew Electric Appliances were also awarded a Bronze Medal for their All Metal Electric and Oil Chick Tier Brooder fitted with patent trip thermostat control, anti-waste hopper and automatic water supply.



Curfew Tier Brooder.

Several other exhibits also received notice.

Taken as a whole, the poultry appliances formed a very attractive feature of the Show.



REPORT OF THE MILKING TRIALS, DAIRY SHOW, 1938.

By STEPHEN BARTLETT, M.C., Ph.D., B.Sc.

The general basis of the Milking Trials at the Dairy Show is a short period test, taking account of the weight and composition of the milk yielded by each cow. The basic principles of preceding years were maintained at the 1938 Show, but certain slight changes became necessary as a result of the alterations in the date and place of the Show.

For several years past the trials have been held on the Sunday and Monday preceding the opening of the Show. The quantity of milk yielded by each cow during a period of 48 hours was weighed, while the quality was recorded by chemical tests over a period of 24 hours. At the 1938 Show the quantity as well as the quality of milk yielded was recorded for 24 hours only. One advantage of the 1938 scheme was that the tests of the milk quality covered the same milkings as the records of yield, a desirable condition which did not apply to previous years' trials. There is no reason to believe that the change had any adverse effect on the accuracy of the trials.

This year the preliminary stripping of cows was done at 1.30 p.m. (or 2 p.m. for herdsmen milking a second cow) on Saturday, 24th September, and the milk yielded during the following 24 hours was weighed and analysed.

The new arrangements involved even more concentrated work than usual for the Milking Trials staff, but the organisation proved equal to the strain and the results of the trials were available shortly after the opening of the Show on the day following the trials.

The number of entries showed a slight decrease on recent years, but a larger proportion of the entries were present at the Show, with the result that there were more animals actually competing in the milking trials than at last year's Show.

The standard of performance was thoroughly satisfactory, although lower than last year, when a remarkably high level was attained.

The number of entries and the standard of performance may have been influenced by the fact that the Show was held about one month earlier than usual. This necessitated the calving dates of competing animals being a month earlier and

some competitors may have had difficulty in arranging earlier calving dates. Further, the age groups of the classes tended to be a month younger; for example, the heifer classes were restricted to animals born on or after 1st August, 1935, and, therefore, eligible animals were under 3 years 2 months old at the time of the trials instead of 3 years 3 months as in previous years. A similar reduction of one month applied to the age restrictions of most of the other classes. It is unlikely that this change made any marked difference in the results, but the influence may be noticeable on the average of a large number of animals.

A bold and progressive innovation at the 1938 Show was the regulation restricting all entries to "Tuberculin Tested" or "Attested" herds or animals which had passed the double intradermal tuberculin test between 22nd July and 20th August, 1938. It is possible that this regulation had an adverse effect on the number of entries, but this may be expected to be only temporary; the ultimate result will undoubtedly give greater confidence to competitors owning tuberculin tested cattle. As usual, separate stalls were provided for the animals from herds licensed by local authorities to produce "Tuberculin Tested" Milk under the Milk (Special Designations) Order, 1936, and animals from herds on the Ministry of Agriculture's Register of Attested herds.

The housing and comfort of the cows in the new exhibition quarters was the subject of favourable comment from many owners and herdsmen. The air-conditioning arrangements in the hall resulted in the complete absence of draughts and comfortable atmospheric conditions free from offensive odours and stuffiness.

To commemorate the Diamond Jubilee Dairy Show the Council of the Association decided to increase the prizes to the following amounts:—First prize, £10; second prize, £6; third prize £4; fourth prize, £2; fifth prize, £1, and to give a sixth prize in each class with 12 to 19 entries and a seventh prize of £1 in each class with 20 or more entries.

Owing to insufficient entries, the "in-milk" classes for Devons, Welsh Blacks and Kerries were cancelled.

The Method of Awarding Points was similar to that of recent years with the exception that the milk yield of one day was used instead of the average of two days. Details of the 1938 scheme are given below:—

One point for every 10 days since calving, deducting the first 40 days, with the maximum of 12 points.

One point for every pound of milk produced in 24 hours.

Twenty points for every pound of butter fat produced.

Four points for every pound of solids-other-than-fat.

Deductions of 10 points are made for each time the fat is below 3 per cent. and for each time the content of non-fatty solids falls below 8.5 per cent.

Disqualification takes place in the case of any animal whose milk from one milking falls below 3 per cent. of fat and for the same milking also falls below 8.5 per cent. of solids-other-than-fat. Such disqualification renders the animal ineligible for any award or trophy in any section of the Show.

Ineligible for Award.—Those animals whose milk at three successive milkings falls below 3 per cent. of fat or below 8.5 per cent. of non-fatty solids are not eligible for any awards or trophies where the Milking Trial points are taken into account. This condition was inaugurated in 1936 to overcome the anomaly of an animal being awarded a prize whose milk was consistently deficient in either fat or non-fatty solids.

Number of Entries.—These totalled 290 divided amongst 23 classes. Last year there were 342 entries in 25 classes.

Number of Competitors.—The number of animals present for competition was 178, or 61.4 per cent. of the entries. This percentage is an appreciable higher one than last year, when only 52.3 per cent. of the entries attended the Show.

Highest Points Gained in the Milking Trials.—The highest total this year was 184.54 points, gained by the British Friesian cow "Lavenham Annie 41st" (No. 68), owned by Messrs. Strutt & Parker (Farms), Ltd.

Highest Yield of Milk.—The highest yield of milk on the day of the trials was 90.10 lb. given by another British Friesian cow, "Lavenham Cactus 27th" (No. 66), belonging to the same owners.

Disqualifications.—Three animals—one Dairy Shorthorn and two British Friesians—were disqualified from any award because at one and the same milking their milk contained less than 3.0 per cent. of fat and less than 8.5 per cent. of solids-not-fat.

Ineligibility for any Award in the Milking Trials.—Three animals—one Dairy Shorthorn, one British Friesian and one Dexter—yielded milk containing less than 8.5 per cent. of solids-not-fat at the three successive milkings and, therefore, became ineligible for any awards in the Milking Trials.

As in previous years, the points earned by the disqualified and ineligible animals are included in the calculations for the average of their classes in Tables I, II, III, V and VI.

Standard Points.—A revised standard of points applicable to each breed was introduced at the 1936 Show and was used again this year.

The class standards are shown below :—

<i>Breed.</i>		<i>Cows over</i>	<i>Cows 3-5</i>	<i>Heifers.</i>
Pedigree Dairy	Short-horn	5 years old.	years.	
		115	95·8	76·7
Non-Pedigree	do.	115		76·7
Lincolnshire Red	...	100		66·7
British Friesian	...	120	100	80·0
South Devon	...	110	91·7	73·3
Devon	...	85		
Red Poll	...	100	83·3	66·7
Welsh Black	...	85		
Ayrshire	...	115	95·8	76·7
Guernsey	...	100	83·3	66·7
Jersey	...	95	79·2	63·3
Kerry	...	80		53·3
Dexter	...	65		43·3

Burroughs' Adding Machines.—The Milking Trial Judges and staff were again assisted in the calculations by Messrs. Burroughs' Adding Machines, Ltd., who kindly loaned two electric calculating machines and arranged for two highly skilled operators to attend the Show to undertake the necessary calculations. This assistance enabled the judges to complete the class awards in the Milking Trials so that they were available soon after the opening of the Show.

NOTES ON CLASSES 1 TO 31.

In reports of the Milking Trials of past years it has been the usual practice to name the first four prizewinners and their owners in each class. In order to abbreviate the present report, reference will be made to the first and second prizewinners only. A more complete list of the awards in all classes will be found near the end of this JOURNAL.

Class 1. Pedigree Dairy Shorthorn Cow over 5 years old.—Entries 16; present 11. The animals in this class gave a uniform and highly creditable performance, the average points for the class being 142, which has only been exceeded on two previous occasions. There was one disqualification for poor quality milk, but all the animals were above the class standard of 115 points. The first prize was awarded to Mr. W. J. Wheeler's cow "Frieth Tiny 4th" (No. 9) with 178·78 points. This cow was also reserve for the Supreme Championship. The second prize went to Mr. A. T. Loyd's "Lockinge Fairy 8th" (No. 13) with 151·62 points.

Class 2. Pedigree Dairy Shorthorn Cow over 3 and under 5 years old.—Entries 17; present 11. The average points obtained by this class was somewhat lower than has been usual in recent years; this was partly due to the fact that four animals lost points for quality of milk. Only two cows failed to reach the class standard of 95·8 points. The first prize was awarded to "Bourneplace Dairymaid 3rd" (No. 31), owned by Mr. John Cronk, with 130·52 points. The second prize went to "Revels Lottie 2" (No. 23), which obtained 128·28 points and was owned by Mr. W. H. Vigus.

The Desborough Cup, which is awarded to the cow in classes 1 or 2 which gains most points in the Milking Trials, was won by Mr. W. J. Wheeler's cow "Frieth Tiny 4th" (No. 9) with 178·78 points. The reserve was Mr. A. T. Lloyd's "Lockinge Fairy 8th" (No. 13) with 151·62 points.

Class 3. Pedigree Dairy Shorthorn Heifer.—Entries 14; present 5. This class was smaller than usual, but the standard of performance was good and all the animals were well above the class standard of 76·7 points. The first prize animal was "Huxham Rosette 2nd" (No. 43); this cow obtained 110·90 points and was owned by Mr. John Day. The second prize went to "Revels Alicia Barrington 2nd" (No. 35), with 107·04 points, owned by Mr. W. H. Vigus.

Class 4. Non-Pedigree Dairy Shorthorn Cow.—Entries 4; present 4. The average performance of this class was reasonably satisfactory although two cows just failed to reach the class standard of 115 points. The first prize was won by the cow "Lady" (No. 51), which obtained 155·14 points and was owned by King's College Farms. The second prize went to the University Farm, Cambridge, for their cow "Cantab Star 13th" (No. 48), with 138·02 points.

Class 5. Non-Pedigree Dairy Shorthorn Heifer.—Cancelled.

The Melvin Perpetual Challenge Cup is awarded to the owner of the Dairy Shorthorn Cow or Heifer entered in Coates' Herd Book or in the Grading Register gaining the greatest number of points on Inspection, in the Milking Trials and Butter Tests, the points to be calculated as for the "Spencer-Stapleton" Cup (see page 125), and the animal must have been bred by its owner. This Cup was won by Mr. J. J. McMenemy with "Park-house Strawberry 16th" (No. 3). The reserve was Messrs Chivers & Sons, Ltd., with "Histon Barrington 16th" (No. 11).

The Extra Prize of £25 offered by the Shorthorn Society for the Dairy Shorthorn Cow or Heifer, pedigree or entered in the Shorthorn Society's Grading Register, gaining most points by Inspection, in the Milking Trials and the Butter Tests as

calculated for the "Spencer-Stapleton" Cup, was won by Mr. W. J. Wheeler with "Frieth Tiny 4th" (No. 9). The reserve for this prize was the cow "Lady" (No. 51), owned by King's College Farms.

The Extra Prize of £10 offered by the Shorthorn Society for the cow exhibited in Class 4 and entered or accepted for entry in the Grading Register of the Shorthorn Society, gaining most points on Inspection and in the Milking Trials (according to the scale set out in the Show Catalogue (p. 78), was won by "Lady" (No. 51), owned by King's College Farms. The reserve was "Cantab Star 13th" (No. 48), owned by University Farm, Cambridge.

Class 6. Lincolnshire Red Shorthorn Cow.—Entries 5; present 4. The standard of performance attained by this class was somewhat lower than the high level of last year, although only one animal, which lost points for a low percentage of solids-not-fat, failed to reach the class standard of 100 points.

The first prize was won by "Histon Fanny 8th" (No. 56) with 137·82 points and the second prize by "Histon Ashleaf 13th" (No. 54) with 111·50 points. Both these animals were owned by Messrs. Chivers & Sons, Ltd.

Additional Prizes of £6, £4 and £1 10s., offered by the Lincolnshire Red Shorthorn Society for cows in Class 6 in the Milking Trials, were awarded to the two prizewinners noted above and to Messrs. Chivers & Sons' cow "Histon Dairymaid 92nd" (No. 55), respectively.

Class 7. Lincolnshire Red Shorthorn Heifer.—Cancelled.

Class 8. British Friesian Cow over 5 years old.—Entries 18; present 9. A very creditable standard was reached by this class, the average points gained by all animals being 158·3. This is some 11 points lower than the record set up last year, the decrease being largely due to the fact that four animals lost points for low quality of milk. The first prize was won by "Lavenham Annie 41st" (No. 68) with 184·54 points, owned by Messrs. Strutt & Parker (Farms), Ltd., and the second prize went to a cow exhibited by the same owners, "Lavenham Cactus 27th" (No. 66), with 177·84 points.

Extra Prizes of £8, £5 and £2, offered by the British Friesian Cattle Society for the Milking Trials in Class 8, were awarded respectively to the first and second prizewinners mentioned above, and to "Hurdlesgrove Pel Betty 2nd" (No. 65), owned by Pinkney Park Estate Co., Ltd.

Class 9. British Friesian Cow over 3 and under 5 years old.—Entries 14; present 5. All the animals in this class were well above the class standard of 100, but the average points were slightly lower than during recent years. In common with the older cow class, this was primarily due to points lost for poor quality milk; every cow was penalised, three for low fat percentage and two for low solids-not-fat percentage. The first prize was awarded to "Egham Thelma 10th" (No. 80), with 164.02 points, owned by Mr. G. J. Caddey. The second prize was won by "Lavenham Lilac 8th" (No. 78), with 145.46 points, owned by Messrs. Strutt & Parker (Farms), Ltd.

Additional Prizes of £8, £5 and £2, offered by the British Friesian Cattle Society for the Milking Trials in Class 9, were awarded respectively to the first and second prizewinners noted above, and to "Monkham's Ruby" (No. 81), owned by Mr. James M. Watt.

Class 10. British Friesian Heifer.—Entries 8; present 5. The standard of performance in this class was thoroughly satisfactory, although the average points of 99.49 was some 19 points lower than the remarkable record set up by the class last year. The first prize was won by "Fintloch Silkie" (No. 96), which obtained 124.84 points, and was owned by Messrs. Hodge Bros. The second prize went to the same owners for "Fintloch Honey 2nd" (No. 95), with 104.60 points.

Class 11. South Devon Cow over 5 years old.—Entries 5; present 3. The performance of this class was scarcely up to the standard of recent years. Only one animal reached the class standard necessary to qualify for an award. The first prize was won by the same animal as last year, viz., "Diptford Downs Milkmaid 13th" (No. 98). This animal obtained 120.02 points, and was owned by Mr. Walter Hunt.

Class 12. South Devon Cow over 3 and under 5 years old.—Entries 5; present 3. Although this class was represented by a limited number of animals the standard of performance was good, all being well above the class standard of 91.7 points. The first prize was awarded to "Winsor Alma 2nd" (No. 105), with 142.9 points, owned by Mr. John T. Dennis. The second prize winner, which obtained 140.2 points, was "Westerland Anne" (No. 106), the property of Mr. V. Bunday.

A Silver Challenge Cup, presented by the South Devon Herd Book Society, to be awarded to the owner of the pedigree South Devon cow gaining the greatest number of points on Inspection (as ascertained under the "Spencer-Stapleton" Cup), in the Milking Trials and Butter Tests, was won by "Winsor Alma 2nd" (No. 105), the property of Mr. John T. Dennis. The reserve was "Westerland Anne" (No. 106), owned by Mr. V. Bunday.

Class 13. *South Devon Heifer*.—Cancelled.

Class 14. *Devon Cow*.—Cancelled.

Class 15. *Red Poll Cow over 5 years old*.—Entries 12; present 11. The high proportion of entries which were present at the Show provided good competition in this class. The standard of performance was slightly lower than usual. The first prize was won by "Parham Minnehaha" (No. 118), with 152.36 points, owned by Lady Denman. The second prize went to "White Hill Arrogant Lily" (No. 112), which scored 138.6 points and was owned by Mrs. R. M. Foot.

Class 16. *Red Poll Cow over 3 and under 5 years old*.—Entries 4; present 2. The number of competitors was disappointing. Both the animals present attained the class standard. The first prize was awarded to "Kirton Faithless" (No. 122) with 97.16 points, owned by Mr. Stuart Paul. The second prize went to "Hallingbury African Morn" (No. 119), which obtained 87.94 points, and was owned by Mrs. M. L. Griffith.

Class 17. *Red Poll Heifer*.—Entries 6; present 4. A moderate standard was attained in this class, and the first prize was won by "Mistley Amy" (No. 128) with 93.84 points, owned by Messrs. Brooks (Mistley), Ltd. The second prize was awarded to "Kirton Selector" (No. 124), which scored 80.72 points and was owned by Mr. Stuart Paul.

The *Thornton Cup*, which is awarded to the owner of the Red Poll cow or heifer gaining the greatest number of points on Inspection (as for the "Spencer-Stapleton" Cup), in the Milking Trials and the Butter Tests, was won by Mr. Stuart Paul with "Kirton Fantasy" (No. 110). The reserve was Mrs. R. M. Foot with "White Hill Arrogant Lily" (No. 112).

The *Red Poll Cattle Society* offered £30 to be divided equally as "dual-purpose" bonuses between animals in Classes 15, 16 and 17 which, being prizewinners on Inspection, also obtain prizes in the Milking Trials. No sum larger than £10 to be awarded in respect of any one animal. Eight animals qualified for an equal share of this £30. The catalogue numbers, names of qualifying animals and their owners are noted below.

Class 15.

			<i>Owned by</i>
No. 107	"Wissett Nonsuch" ...	...	Mrs. Walter Scrimgeour.
" 110	"Kirton Fantasy" ...	...	Mr. Stuart Paul.
" 118	"Parham Minnehaha" ...	...	Lady Denman.

Class 16.

No. 119	"Hallingbury African Morn"	Mrs. M. L. Griffith.
" 122	"Kirton Faithless" ...	Mr. Stuart Paul.

Class 17.

Owned by

No. 123	"Wissett Faintail" ...	Mrs. Walter Scrimgeour.
" 124	"Kirtou Selector" ...	Mr. Stuart Paul.
" 128	"Mistley Amy" ...	Messrs. Brooks (Mistley), Ltd.

Class 18. *Welsh Black Cow*.—Cancelled.

Class 19. *Ayrshire Cow over 5 years old*.—Entries 19; present 11. The level of performance attained by many of the animals in this class was high, but the general average of the class was lower than usual. The first prize was awarded to "Broomlands Bloom" (No. 130), which obtained 174.36 points and was owned by Mr. Leslie K. Osmond. The second prize went to "Overlaw Tote" (No. 142), with 153.10 points, owned by Mr. John G. Lohoar.

Extra Prizes of £4, £3, £2, £2 and £1 were offered by the Ayrshire Cattle Herd Book Society in Class 19 for competition in the Milking Trials. The respective winners were "Broomlands Bloom" (No. 130), "Overlaw Tote" (No. 142), "Rotten Row Kitty" (No. 132), owned by Mr. J. Templeman; "Hill Duchess 16th" (No. 140), owned by Mr. A. W. Montgomerie; and "Draffan Patricia 2nd" (No 141), owned by Mr. John G. Lohoar.

Class 20. *Ayrshire Cow over 3 and under 5 years old*.—Entries 10; present 6. The number of entries and competitors in this class was lower than usual, but the standard of performance was highly creditable. The points obtained by every animal was well in excess of the class standard of 95.8 points, and the average for the class (143.37 points) was appreciably higher than that of the older cow class. The first prizewinner was "Barboigh Lilius 28th" (No. 148); this cow, which was owned by Mr. Alex Watson, scored 169.74 points, and was the winner in the same class, and also the winner of the Supreme Championship, last year. The second prize was won by "Sheepcotes Relish" (No. 152) with 166.22 points, owned by Mr. John Bone. This cow won the Ayrshire Heifer Class last year with a record number of points.

Class 21. *Ayrshire Heifer*.—Entries 15; present 10. The performance of this class was very high and every animal exceeded the class standard of 76.7 points. The average for the class was 112.54 points, which was only three-quarters of a point lower than the remarkable record set up last year. The first prizewinner was "Nether Craig Marina" (No. 161), with 137.40 points. She was owned by Mr. Alex Cochrane. The second prize was awarded to "Sheepcotes Lady Love" (No. 166), which obtained 131.82 points and was owned by Mr. John Bone.

The Rowallan Cup is awarded to the owner of the Ayrshire Cow or Heifer, registered or eligible for registration with a number in the Ayrshire Cattle Herd Book, gaining the greatest number of points on Inspection, in the Milking Trials and in the Butter Tests. Points for Inspection to be awarded to the first six animals in order of merit as follows:—100, 90, 80, 70, 65 and 60. In the case of heifers an additional 15 per cent. of the points scored in the Milking Trials and Butter Tests to be added to their total. The winner of the Cup this year was Mr. Alex Watson with the same cow which won it last year, viz., "Barboigh Lillas 28th" (No. 148). The reserve went to Mr. John Bone for his cow "Sheepeotes Relish" (No. 152).

Extra Prizes of £10 and £5 were offered by the English Committee of the Ayrshire Cattle Herd Book Society to the owner of an Ayrshire herd in England or Wales whose cow or heifer gained the greatest number of points under the conditions of the Rowallan Challenge Cup. Both these prizes were won by Mr. John Bone for his cow "Sheepeotes Relish" (No. 152), and his heifer "Sheepeotes Lady Love" (No. 166), respectively.

Class 22. Guernsey Cow over 5 years old.—Entries 8; present 6. The standard of performance of this class was exceptionally high and the new record class standard set up last year was again eclipsed. The average of 137·3 points exceeded last year's record by a margin of no less than 4·4 points. All the competing cows were above the class standard of 100 points. The first prize was awarded to "Bella's Cora 4th of Les Jetteries" (No. 173), the property of the Hon. A. E. Guinness. This cow obtained 184·14 points, which is a new individual cow record for the Guernsey cow (over 5 years) class. It is of interest to note that the same cow holds the individual record for the Guernsey cow (3 to 5 years) class. This record of 184·41 points was made at the 1936 Show. The second prize was won by "Rosey of Goodnestone 64th" (No. 175), with 146·60 points, owned by Mr. G. R. Cobb.

Class 23. Guernsey Cow under 5 years old which has produced two or more calves.—Entries 8; present 8. All the entries in this class competed at the Show and put up a very creditable performance. The chief feature was uniformity rather than exceptional individual merit. The first prizewinner was "Primrose 3rd of La Croix" (No. 186), with 117·60 points, owned by Mr. D. R. Woosley. The second prize was won by Mr. S. R. Hicks' cow "Ways Primula" (No. 183), which scored 114·84 points.

Class 24. Guernsey Heifer which has produced her first and only calf at or under the age of 2 years 9 months.—Entries 9; present 7. The first prize in this satisfactory class

was won by the Hon. A. E. Guinness' heifer "Holmbury Bella's Cora" (No. 189), which obtained 110.82 points. The second prize went to "Pixie of Townhill" (No. 195). She was less than one point behind the winner and was owned by Lord Swaythling.

The Stagenhoc Challenge Cup, awarded to the owner of the Guernsey Cow or Heifer gaining the greatest number of points on Inspection (as for the "Spencer-Stapleton" Cup), in the Milking Trials and in the Butter Tests, was won by the Hon. A. E. Guinness with "Bella's Cora 4th of Les Jetteries" (No. 173). The reserve was Mr. G. R. Cobb with "Rosey of Good-nestone 64th" (No. 175).

An Extra Prize of £10, offered by the English Guernsey Cattle Society for the Guernsey Cow or Heifer gaining the highest number of points in the Milking Trials and Butter Tests, was also won by the Hon. A. E. Guinness' cow, "Bella's Cora 4th of Les Jetteries" (No. 173).

Class 25. Jersey Cow over 5 years old.—Entries 33; present 24. This was the largest class in the Milking Trials and the standard attained was of a high order. An unusual feature was the loss of points by no less than four cows, for milk containing less than 8.5 per cent. of solids-not-fat.

The average fat percentage of the class was similar to that of former years, but the average percentage of solids-not-fat was appreciably lower. Part of this decrease may be accounted for by one cow (No. 203), which was suffering from transport fever and yielded very little milk but of abnormal composition. Unfortunately, three other cows also lost points for milk containing less than 8.5 per cent. of solids-not-fat, a most unusual proportion for this breed. The first prize animal was last year's winner, *i.e.*, Mr. J. W. McCallum's cow "Peareelands Eileen 10th" (No. 229). She obtained 177.28 points, which is only 0.58 points lower than the individual record for this class. The second prize was won by "Hot Belle" (No. 227), with 149.36 points, owned by Mr. G. N. and Miss D. Charrington.

Class 26. Jersey Cow under 5 years old which has produced two or more calves.—Entries 22; present 10. A very creditable performance was shown by this class; every animal attained the class standard of 79.2 points. The first prize went to "Arkona's Rosy" (No. 235), with 121.94 points, owned by Mrs. Henry Hawkins. The second prize was awarded to Capt. A. S. Lockwood's cow "Normanby Sweep's Claudette" (No. 234), which obtained 121.38 points.

Class 27. Jersey Heifer which has produced her first and only calf at or under 2½ years old.—Entries 23; present 14. The entries and the performance in this class was quite satis-

factory. The first prize was won by "Knowle Foxglove" (No. 257), which obtained 109.40 points, and was owned by the Ladies Constance Ryder and Audrey Anson. The second prize was awarded to Mrs. R. M. Foot's heifer "White Hill Dainty Bess" (No. 269) with 98.98 points.

The Blythwood Production Challenge Bowl is awarded to the owner of the Jersey Cow or Heifer gaining the greatest number of points in the Milking Trials and the Butter Tests provided the animal has been bred in Great Britain or Ireland.

This Cup was won for Mr. J. W. McCallum by the winning animal of last year, viz., "Pearcelands Eileen 10th" (No. 229). The reserve went to Mr. H. S. Mountain for "Groombridge Recorder's Imogen" (No. 202).

The Jersey Perpetual Production Trophy is awarded to the Jersey Cow or Heifer gaining the greatest number of points in the Milking Trials and the Butter Tests whose milk contains not less than 4 per cent. of butter fat in the day's yield.

This trophy was also won by Mr. McCallum's cow "Pearcelands Eileen 10th" for the second year in succession, the reserve was Mr. G. N. and Miss D. Charrington with "Hot Belle" (No. 227).

The Loxwood Jubilee Challenge Cup is awarded to the owner of the Jersey Cow or Heifer obtaining the highest number of points for Milk, Butter, Lactation and Inspection. Points are calculated as follows:—1 for every pound of milk, taking the day's yield; 1 for every ounce of butter; 20 for first Inspection prize; 16 for second; 12 for third; 8 for fourth; 5 for fifth; 3 for sixth. Points for Lactation as in the Milking Trials, and the average percentage of butter fat to be not less than 4.5.

The winner and reserve, respectively, for this Cup were the same owners and animals as for the Production Trophy noted above.

Class 28. Kerry Cow.—Cancelled.

Class 29. Kerry Heifer.—Cancelled.

Class 30. Dexter Cow.—Entries 5; present 5: The average results for this class were seriously affected by one cow (No. 278), which suffered from indigestion and yielded milk of abnormal quality. Apart from this animal, the standard of performance was satisfactory. The first prize was won by Lady Loder's cow "Grinstead Trixie 4th" (No. 277) with 94.30 points. The second prize went to the same owner for her cow "Crocus" (No. 276) with 84.10 points.

The Loder Perpetual Challenge Cup is awarded to the owner of the Dexter Cow or Heifer gaining the greatest number of points on Inspection (as ascertained under the "Spencer-Stapleton" Cup, see page 125), in the Milking Trials and Butter Tests. The winner was Lady Loder with "Grinstead Trixie 4th" (No. 277), and the reserve went to the same owner for "Crocus" (No. 276).

NOTES ON CLASSES 57 TO 64.

The above classes are for the progeny of bulls and the awards are made solely on the basis of the performance of two cows or heifers, the progeny of each bull.

Each cow or heifer to be eligible to compete must attain the standard of the class in which she is exhibited, and the awards are made on the total points gained above the class standard of each cow or heifer.

Class 57. Progeny of Dairy Shorthorn Bull.—Entries 4; present 2. Only one pair of animals entered in this class complied with all the conditions and attained the necessary standards of production. This pair were the progeny of "Greattew Trickster" (215974), namely "Greattew Janette 8th" (No. 27), and "Greattew Barrington 2nd" (No. 40). These animals gained 35.46 points, and were exhibited by Mr. R. Tustian, who also bred their sire. The method of calculation is illustrated by the results of Class 59 below.

Class 58. Progeny of Lincolnshire Red Shorthorn Bull.—Entries 2; present 1. The first prize was won by the progeny of "Bendish Dairy King" (23463), bred by Mr. F. Russell Wood. The two daughters were "Histon Ashleaf 13th" (No. 54), and "Histon Fanny 8th" (No. 56), exhibited by Messrs. Chivers & Sons, Ltd., and the points gained were 49.32. It is interesting to note that the progeny of the same bull won the first prize last year.

Class 59. Progeny of British Friesian Bull.—Entries 6; present 3. One animal in one pair present did not attain the class standard and so became ineligible. The details of the other two pairs are set out in the following table, showing the first and second prizewinners and illustrating the method of calculation of points.

Bull.	Progeny and Exhibitor.	Catalogue No.	Class	Milking Trial Points.	Cow Standard Points	Points above Class Standard.	Total.	Award.
Terling Matrix (41339)	Flintloch Honey 2nd	95	10	104.60	80	24.60	69.14	1st
	Flintloch Silkie	96	10	124.84	80	44.84		
Sands Fokke 26th (41157)	Barwyke Hene	91	10	81.88	80	1.88	6.42	2nd
	Barwyke Fokke Lilac	92	10	84.54	80	4.54		

Class 60. Progeny of Red Poll Bull.—Entries 2; present 0.

Class 61. Progeny of Ayrshire Bull.—Entries 3; present 1.

The first and only prize in this class was won by the progeny of the bull "Rottenrow Milkman" (33912), bred by Mr. J. Templeton. His daughters, "Sheepcotes Relish" (No. 152) and "Sheepcotes Lady Love" (No. 166), gained 125.54 points, and were both bred and exhibited by Mr. John Bone.

Class 62. Progeny of Guernsey Bull.—No entry.

Class 63. Progeny of Jersey Bull.—Entries 2; present 1. There was no award in this class due to the fact that one of the animals in the pair which was present failed to attain the class standard.

Class 64. Progeny of Bull of any other Breed.—Entries 1; present 1. No award was made in this class because one of the animals in the pair was below the class standard in Milking Trial points.

CHALLENGE CUPS AND TROPHIES.

Open to all Breeds.

1. *The British Dairy Farmers' Association Supreme Individual Championship Trophy.*—This trophy is the highest and most important award which can be won by an individual animal at the Show. It is awarded to the owner of the cow gaining the greatest number of points on Inspection, in the Milking Trials and in the Butter Tests, provided that during the trials the milk analysed contains not less than 3 per cent. of fat and 8.5 per cent. solids-not-fat.

After the Milking Trials and Butter Test figures are available a Breed Society may then select not more than two animals of its breed from the cow classes to parade for the award of points by Inspection. The animal or animals chosen must have gained points up to the respective class standards in the Milking Trials and Butter Tests. When judged by Inspection the best animal in the opinion of the judge is awarded 125 points and the remaining animals receive points according to the judge's opinion. The points allocated on Inspection are then added to those gained in the Milking Trials and Butter Tests.

The Inspection judging was carried out by Mr. W. Nixon. Fourteen animals were paraded, each of the following breeds being represented by two animals:—Dairy Shorthorn, British Friesian, Red Poll, Ayrshire, Guernsey, Jersey and Dexter. The

points gained by each animal and the awards are shown in the following table:—

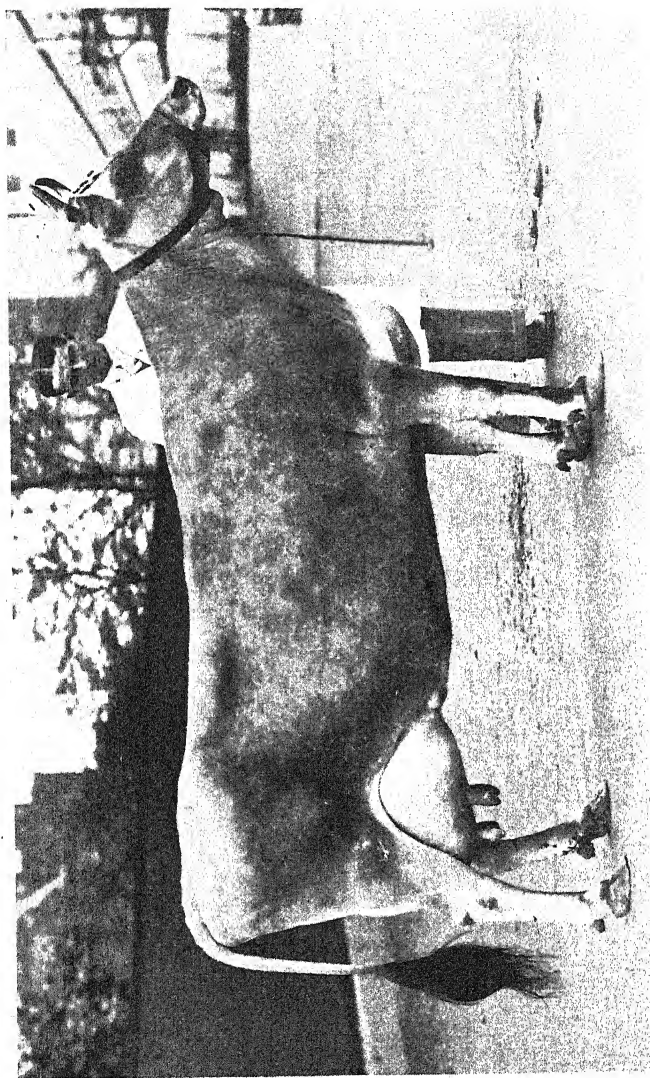
Cow.				Points gained in			
Breed and Number.				Milking Trials.	Butter Tests.	Inspection.	Total Points.
Jersey	...	...	229	177.28	67.50	110.0	354.78
Dairy Shorthorn	...	...	9	178.78	59.75	110.0	348.53
Ayrshire	...	...	148	169.74	58.75	120.0	348.49
Ayrshire	...	...	152	166.22	60.00	105.0	331.22
British Friesian	...	...	68	184.54	49.75	95.0	329.29
Dairy Shorthorn	...	...	15	150.28	47.50	125.0	323.32
Guernsey	...	...	173	184.14	72.50	60.0	316.64
British Friesian	...	...	60	170.68	54.15	80.0	304.83
Guernsey	...	...	175	146.60	53.75	100.0	300.35
Red Poll	...	...	112	138.60	52.25	85.0	275.85
Jersey	...	...	213	132.30	49.50	80.0	261.80
Red Poll	...	...	111	121.28	49.25	90.0	260.53
Dexter	...	...	277	94.30	39.75	75.0	209.05
Dexter	...	...	276	84.10	37.05	70.0	191.15

Competition was as keen as ever and there was less than seven points between the total of the leading three animals.

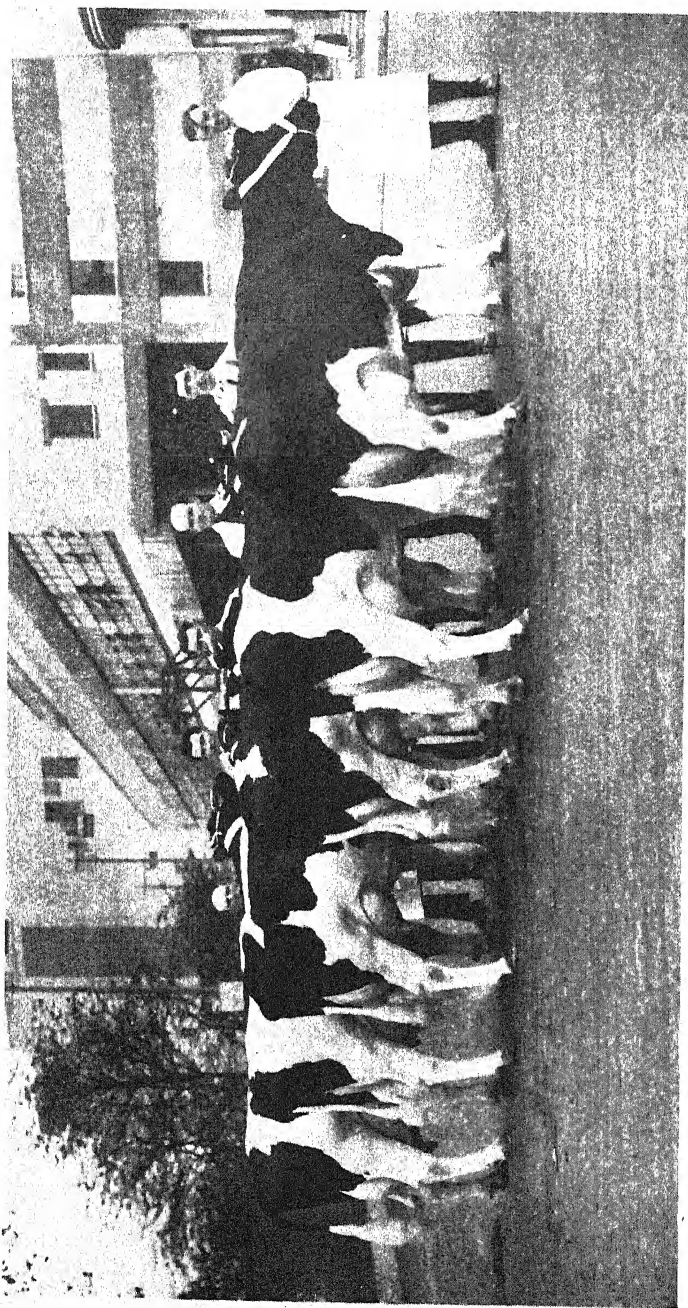
The winner of the trophy was the Jersey cow "Pearcelands Eileen 10th" (No. 229), owned by Mr. J. W. McCallum—a remarkable performance for a cow weighing only 1,077 lbs. A photograph of the Supreme Champion was taken during the Show under the supervision of representatives of the Association. A reproduction of this photograph is published with this report. The reserve was the Dairy Shorthorn cow "Frieth Tiny 4th," owned by Mr. W. J. Wheeler. The trophy was presented to Mr. J. McCallum by Miss Miller Mundy. The audience were interested and appreciative in spite of the fact that at the time of judging the international crisis had reached a critical stage.

2. The Bledisloe Challenge Trophy.—This trophy is awarded to the Breed Society judged to have the best exhibit of six good all-round dairy cows. To the total of the Milking Trial points gained by the six cows there is added the Inspection points awarded by the judge. The team which he considers best receives 500 points and the other teams receive points according to the judge's opinion. Six Breed Societies paraded teams—the Dairy Shorthorn, British Friesian, Red Poll, Ayrshire, Guernsey and Jersey. The Inspection judging was performed by Mr. A. Weightman. The ample space available at Earls Court made the parade a particularly impressive sight which could be seen in comfort by a large crowd of visitors, either at close quarters from the ring side or as a general commanding view from the balcony.

The trophy was won for the second year in succession by the British Friesian team with 1,484.6 points. A photograph of the six animals comprising the winning British Friesian



PEARCELANDS EILEEN 10th (Cat. No. 229).
Breed—Jersey; live weight, 1077 lbs.
Owner—Mr. J. W. McCallum, Chestam Bucks.
Supreme Individual Champion B.D.F.A. Show, 1938.
Age when photographed—7 years 3 months.
Breeder—The Pearcelands Jersey Herd and Dairies Ltd.



BRITISH FRIESIAN TEAM.
Winners of the Helderston Challenge Trophy, B.D.F.A. Show, 1938.

team, taken during the Show under the supervision of the Association, is published with this report. The reserve team was the Ayrshires with 1,458·6 points. The following table gives the details of each team :—

BRITISH FRIESIANS.		AYRSHIRES.	
Number in Catalogue.	Milking Trial Points.	Number in Catalogue.	Milking Trial Points.
58	172·52	130	174·36
60	170·68	132	149·02
63	165·00	140	144·02
66	177·84	142	155·10
68	184·54	148	169·74
80	164·02	152	166·22
Total M.T. Points ...	1034·60	Total M.T. Points ...	958·46
Inspection Points ...	450·00	Inspection Points ...	500·00
TOTAL ...	1484·60	TOTAL ...	1458·46
DAIRY SHORTHORNS.		GUERNSEYS.	
Number in Catalogue.	Milking Trial Points.	Number in Catalogue.	Milking Trial Points.
2	134·20	173	184·14
3	149·34	174	123·88
9	178·78	175	146·60
13	151·62	177	144·84
15	150·82	181	111·24
51	155·14	186	117·60
Total M.T. Points ...	919·90	Total M.T. Points ...	828·30
Inspection Points ...	445·00	Inspection Points ...	420·00
TOTAL ...	1364·90	TOTAL ...	1248·30
RED POLLS.		JERSEYS.	
Number in Catalogue.	Milking Trial Points.	Number in Catalogue.	Milking Trial Points.
107	121·78	198	125·74
110	135·54	200	110·20
111	121·28	227	140·36
116	118·02	235	121·94
117	132·36	246	100·14
118	152·36	250	109·96
Total M.T. Points ...	781·34	Total M.T. Points ...	717·34
Inspection Points ...	430·00	Inspection Points ...	440·00
TOTAL ...	1211·34	TOTAL ...	1157·34

A summary of the points gained by each team is given below :—

Breed.	Milking Trial Points.	Inspection Points.	Total.	Award.
British Friesians ...	1034·60	450·00	1484·60	Winner Reserve
Ayrshires ...	958·46	500·00	1458·46	
Dairy Shorthorns ...	919·90	445·00	1364·90	
Guernseys ...	828·30	420·00	1248·30	
Red Polls ...	781·34	430·00	1211·34	
Jerseys ...	717·34	440·00	1157·34	

The trophy was presented to Mrs. E. G. Strutt, representing the British Friesian Cattle Society, by Lord Eltisley before a large and appreciative audience.

3. *The Morrison Challenge Trophy*.—This trophy is awarded on lines intended to recognise consistent all-round success at three successive Dairy Shows. Competition is limited to animals which have attained the standard of the class in which they were exhibited in the Milking Trials and in the Butter Tests at three successive Shows, and the winner is the animal which has gained the highest number of points according to the following scale :—

- (a) Milking Trials—Number of points over class standard.
- (b) Butter Tests—Three times the number of points over the class standard.
- (c) Inspection—1st prize, 40 points; 2nd prize, 30; 3rd prize, 20; 4th or reserve, 10.

Three animals were eligible for competition, and the winner proved to be Mr. J. W. McCallum's Jersey cow "Pearcelands Eileen 10th, with 405·85 points. The reserve was Mr. John T. Dennis' South Devon cow "Winsor Alma 2nd," with 314·40 points. The points obtained under the separate headings are set out below :—

" WINSOR ALMA 2ND."

Year.	No. in Catalogue.	Milking Trials.			Butter Tests.			Inspection.	
		Points.	Class Standard.	Net Points	Points.	Class Standard.	Net Points	Award.	Points.
1936	165	109·73	73·3	36·43	42·00	22·7	57·90	Reserve	10·0
1937	161	111·52	91·7	19·82	38·70	35·3	10·20	2nd	30·0
1938	105	142·90	91·7	51·20	58·25	35·3	68·85	2nd	30·0
			Total	107·45		Total	136·95	Total	70·0

Grand Total ... 314·40

" PEARCELANDS EILEEN 10TH."

Year.	No. in Catalogue.	Milking Trials.			Butter Tests.			Inspection.	
		Points.	Class Standard.	Net Points	Points.	Class Standard.	Net Points	Award.	Points.
1936	324	139·92	95	44·92	58·75	35·0	71·25	None	—
1937	306	157·85	95	62·85	61·35	42·0	58·05	4th	10·0
1938	229	177·28	95	82·28	67·50	42·0	66·50	None	—
			Total	190·05		Total	205·80	Total	10·0

Grand Total ... 405·85

4. *The Barham Challenge Cup*.—This cup is awarded to the cow gaining the greatest number of points in the Milking Trials. This year's winner was the British Friesian cow, "Lavenham Annie 41st" (No. 68), with 184.54 points, owned and bred by Messrs. Strutt & Parker (Farms), Ltd.; the reserve went to the Hon. A. E. Guinness for his Guernsey cow, "Bella's Cora 4th of Les Jetteries" (No. 173), which, with 184.14 points, was less than half a point behind the winner.

By this victory, the Barham Cup now becomes the property of Messrs. Strutt & Parker (Farms), Ltd., whose previous successes were in 1926, 1933 and 1937.

5. *The Spencer-Stapleton Cup*.—At last year's Show the Spencer Challenge Cup, which has been competed for since 1902, was won outright, thereby removing this valuable trophy from competition at the Show. Through the kindness of Mr. J. Gillard Stapleton a new cup was presented for competition at this year's Show and named the Spencer-Stapleton Challenge Cup. The conditions governing the award of this cup are identical with those previously laid down for the Spencer Challenge Cup, namely, it is awarded to the owner of the cow gaining the greatest number of points in the Milking Trials, Butter Tests and Inspection. The points for Inspection are allotted as follows:—1st prize, 50; 2nd prize, 45; 3rd prize, 40; 4th place, 35; 5th place, 30; 6th place, 25 points.

The first winner of this new cup was the Hon. A. E. Guinness for his Guernsey cow "Bella's Cora 4th of Les Jetteries" (No. 173), which obtained 296.64 points. The reserve went to Mr. Alex. Watson for his Ayrshire cow "Barboigh Lillias 28th (No. 148), with 278.49 points.

6. *The Shirley Cup* is awarded to the owner of the cow giving the greatest average daily weight of milk during the period of the Milking Trials, provided the milk contains not less than 3 per cent. fat and 8.5 per cent. of solids-not-fat.

The winner and reserve for this cup was Messrs. Strutt & Parker (Farms), Ltd., with their British Friesian cows "Lavenham Cactus 27th" (No. 66), which yielded 90.10 lb. milk, and "Lavenham Annie 41st" (No. 68), with 87.10 lb. milk, respectively.

Having been awarded the Shirley Cup in 1926, 1933 and 1937, Messrs. Strutt & Parker (Farms), Ltd., now win this trophy outright.

7. *The Breeders' Milk Perpetual Challenge Trophy* is awarded to the owner of the cow or heifer of any breed, entered in or eligible for the Herd Book of its Breed, obtaining in the Milking Trials the greatest number of points for milk per 1,000 lb. live weight with lactation points added. Animals to be eligible for this trophy must have been bred by the owner.

The winner was Mr. H. S. Mountain with his Jersey cow "Groombridge Recorder's Imogen" (No. 202), which obtained 166.42 points per 1,000 lb. live weight. The same owner secured the reserve with another Jersey cow, "Groombridge Thrrips Bella" (No. 201).

8. *The National Milk Challenge Cup*.—The cup is awarded under the same conditions as the Breeders' Milk Challenge Trophy, except that competing animals need not be bred by the owners. The winner was Mr. G. N. and Miss D. Charrington, with their Jersey cow "Hot Belle" (No. 227), with 199.38 points per 1,000 lb. live weight. The reserve went to the Hon. A. E. Guinness' Guernsey cow "Bella's Cora 4th of Les Jetteries" (No. 173).

9. *The Robert L. Mond Special Prize of £10* is awarded to the owner of the two animals, the progeny of one bull gaining the greatest number of points above their respective class standard.

The winner of this prize was Mr. John Bone with his Ayrshire cows "Sheepeotes Relish" (No. 152) and "Sheepeotes Lady Love" (No. 166), daughters of the bull "Rottenrow Milkman" (63685). The total points obtained were 125.54. Messrs. Hodge Bros. were placed reserve for their pair of Friesian cows, "Fintloch Honey 2nd" (No. 95) and "Fintloch Silkie" (No. 96), the daughters of "Terling Matrix" (41339), with 69.44 points.

A summary of the distribution of the trophies and reserve positions for open competition among the breeds at the 1938 Show is as follows:—

<i>Trophy.</i>	<i>Winner.</i>	<i>Reserve.</i>
1. Supreme Champion ...	Jersey ...	Dairy Shorthorn
2. Bledisloe Trophy ...	British Friesian ...	Ayrshire
3. Morrison Trophy ...	Jersey ...	South Devon
4. Barham Cup ...	British Friesian ...	Guernsey
5. Spencer-Stapleton Cup	Guernsey ...	Ayrshire
6. Shirley Cup ...	British Friesian ...	British Friesian
7. Breeders' Cup ...	Jersey ...	Jersey
8. National Milk Cup ...	Jersey ...	Guernsey
9. Robert L. Mond Prize...	Ayrshire ...	British Friesian

The Record of Performance Table for each class introduced six years ago is given below with such alterations as have been rendered necessary. It is possible that certain errors still exist in this table, and any information of any record incorrectly given will be greatly appreciated.

RECORD PERFORMANCES.

Highest Points gained in the Milking Trials.

Year.	Breed and Class.	Name of Animal.	No. in Catalogue.	Points.
1931	Dairy Shorthorn Cow (over 5 years)	" Orfold Jessie 2nd "	9	186.78
1936	Dairy Shorthorn Cow (3 to 5 years)	" Parkhouse Strawberry 16th "	18	181.07
1934	Dairy Shorthorn Heifer	" St. Clere Ruby 6th "	61	132.75
1931	Dairy Shorthorn Cow (Non-pedigree)	" Maud "	81	198.35
1936	Dairy Shorthorn Heifer (Non-pedigree)	" Mary "	69	122.31
1936	Lincoln Red Shorthorn Cow ...	" Histon Acacia 5th "	77	190.38
1937	Lincoln Red Shorthorn Heifer ...	" Burton Venus 17th "	89	126.45
1932	British Friesian Cow (over 5 years)	" Oakham Dainty " ...	111	215.30
1937	British Friesian Cow (3 to 5 years)	" Oakham Dainty Gem "	127	193.07
1936	British Friesian Heifer	" Flintloch Ida " ...	146	140.37
1930	South Devon Cow (over 5 years)	" Milkmaid 14th " ...	181	198.50
1936	South Devon Cow (3 to 5 years)	" Dartington Dairymaid "	158	164.29
1932	South Devon Heifer	" Ferry Primula " ...	186	114.83
1934	Devon Cow	" Corton Comet " ...	184	160.20
1937	Red Poll Cow (over 5 years) ...	" Kirton Sundial " ...	169	185.61
1936	Red Poll Cow (3 to 5 years) ...	" Kirton Sundial " ...	192	187.23
1928	Red Poll Heifer	" Basildon Rosalind "	211	124.80
1926	Blue Albion Cow	" Elsenham Jessie " ...	264†	156.80
1935	Welsh Black Cow	" Grace "	249	169.67
1932	Ayrshire Cow (over 5 years) ...	" Eglington Juno " ...	228	206.10
1937	Ayrshire Cow (3 to 5 years) ...	" Barboigh Lillas 28th "	213	184.56
1937	Ayrshire Heifer	" Sheepcotes Relish "	252	148.33
1938	Guernsey Cow (over 5 years) ...	" Bella's Cora 4th of Les Jetteries "	173	184.14
1936	Guernsey Cow (3 to 5 years) ...	" Bella's Cora 4th of Les Jetteries "	207	184.41
1932	Guernsey Heifer	" Dairy Queen of Clover Top "	260	137.20
1931	Jersey Cow (over 5 years) ...	" Lady Spotted Pearl " ...	300	177.86
1937	Jersey Cow (3 to 5 years) ...	" Conyboro Premature 6th "	314	142.16
1937	Jersey Heifer	" Loxwood Estellair " ...	337	120.16
1925	Kerry Cow	" Buckland Peace 2nd "	394†	134.20
1929	Kerry Heifer	" Hattingley Ebony " ...	324	85.00
1928	Dexter Cow	" Grinstead Taxus " ...	338†	105.19
1929	Dexter Heifer	" Grinstead Fuchsia 2nd "	335†	63.30

All the above cows were milked thrice daily except those marked †.

RECORD YIELDS OF MILK.

Greatest average yield for two days.—Cows milked thrice daily:—

1929—British Friesian cow " Penshurst Lofly " (No. 124), 102.65 lb.

Greatest average yield for two days.—Cows milked twice daily:—

1924—British Friesian cow " Beccles Peggotty " (No. 154), 85.1 lb.

Greatest yield of milk at one milking:—

1921—Dairy Shorthorn (non-pedigree) cow " Golden Sovereign " (No. 89), 47.6 lb.

The following tables supply valuable information on the performances of the different breeds in their respective classes at the 1938 and preceding Shows.

Table I contains in summarised form the entries, the average live weight, milk yield, fat percentages, and points earned and lost in each class, also the average milk yield and points per 1,000 lb. live weight.

Table II shows the number of animals tested, average points gained, number of animals attaining the Association's class standard points, and the average live weight of each class at the last three Shows.

Table III shows the average points in the Milking Trials by each class each year since 1922 and averages of the twice and the thrice daily milkers.

Table IV shows the highest points gained in each class in each year since 1929.

Table V shows the average yield and quality of the milk yielded by each class at the 1938 Show.

Table VI shows the number of animals yielding milk deficient in fat and solids-not-fat in each class of each Show since 1929.

For comparative purposes the figures for cows milked twice daily and those milked thrice daily are given separately.

TABLE I.—SHOWING THE PERFORMANCE OF EACH CLASS—1938.

Class.	DESCRIPTION.	Number in Class.		Average Live Weight of Class.	Average Yield of Milk.	Yield of Milk per 1,000 lbs. Live Weight.	Average Fat.	Animals below Standard for Fat, even, morn., or aft.	Animals losing Points for Quality of Milk.	Average Points lost by Class for Quality of Milk.	Average Points per 1,000 lbs. Live Weight.	Average Points gained by Class.	B.D.F.A. Standard Points for Class.
		Entered.	Present in Milking Trials.										
Cows over 5 years old.													
1	Dairy Shorthorn ...	16	11	1,376	64.65	46.99	4.29	9.1	9.1	1.82	103.20	142.00	115
4	Ditto Non-pedigree ...	4	4	1,387	57.66	41.58	4.56	—	—	—	93.06	120.03	115
6	Lincoln Red Shorthorn ...	5	4	1,373	50.68	36.92	4.42	—	25.0	5.00	81.23	111.50	100
8	British Friesian ...	18	9	1,328	79.84	60.10	3.76	9.1	44.4	7.78	110.16	153.30	120
11	South Devon ...	5	3	1,615	39.26	24.31	5.10	—	—	—	62.78	101.41	110
15	Red Poll ...	12	11	1,255	56.98	45.40	4.02	18.2	18.2	3.64	97.42	122.27	100
19	Ayrshire ...	19	11	1,176	57.25	48.68	4.39	—	9.1	0.91	107.95	126.96	115
22	Guernsey ...	8	6	1,058	55.28	52.24	5.59	—	16.7	1.67	120.69	137.25	100
25	Jersey ...	33	24	*868	46.78	*55.95	5.62	4.2	20.8	2.50	*137.61	115.40	95
30	Dexter ...	5	†5	638	31.46	49.28	6.42	—	20.0	6.00	118.84	75.87	65
Cows over 3 and under 5 years.													
2	Dairy Shorthorn ...	17	11	1,241	51.12	41.13	3.74	9.1	36.4	5.45	82.88	102.90	95.8
9	British Friesian ...	14	5	1,293	71.46	55.28	3.64	60.0	100.0	12.00	105.49	136.35	100
12	South Devon ...	5	3	1,443	57.17	39.61	4.65	—	—	—	91.28	131.75	91.7
Carried forward		161	107										

* Average of 23 animals only; the live weight of one cow (No. 203) was not taken. The other figures for this class include this cow, which had transport fever and yielded only 5.3 lb. milk containing 16.25 per cent. fat and 8.87 per cent. solids-not-fat.

† Includes one cow (No. 278) which had indigestion and yielded 19.2 lb. milk containing 13.07 per cent. fat and 7.86 per cent. solids-not-fat.

TABLE II.—SHOWING NUMBER OF COWS TESTED, AVERAGE POINTS GAINED AND NUMBER OF COWS ATTAINING THE ASSOCIATION'S STANDARD—1936 TO 1938.

Class.	Description.	B.D.F.A. Standard Points.	Number of Cows Tested.			Average Points Gained.			Number and Percentage of Cows above Standard.						Average Live Weight of Class.				
			1936	1937	1938	1936	1937	1938	1936		1937		1938		lbs.	1936	1937	lbs.	1938
									%	%	%	%	%	%					
1	Dairy Shorthorn Pedigree Cow	115.0	7	11	11	135.09	128.94	142.00	6	85.7	10	90.9	11	100.0	11	100.0	1,449	1,337	1,376
2	Ditto (3-5 years)	95.8	12	13	11	131.32	124.60	102.90	10	83.3	11	84.5	9	81.8	1,350	1,340*	1,241		
3	Ditto Heifer	76.7	7	8	5	101.42	89.19	97.70	7	100.0	6	75.0	5	100.0	1,096	1,134	1,003		
4	Ditto Non-pedigree Cow	115.0	4	3	4	134.18	144.41	120.03	3	75.5	3	100.0	2	50.0	1,328	1,332	1,387		
5	Ditto Heifer	76.7	6	4	—	97.10	89.14	—	5	83.3	3	75.0	—	—	1,042	1,068	—		
6	Lincoln Red Shorthorn...	100.0	9	5	4	126.73	132.08	111.50	8	88.8	5	100.0	3	75.0	1,388	1,377	1,373		
7	Ditto Heifer	66.7	6	4	—	91.08	104.14	—	5	83.3	4	100.0	—	—	1,198	1,084	—		
8	British Friesian Cow	120.0	11	13	9	168.97	169.60	158.30	10	90.9	12	92.3	8	88.9	1,461	1,415	1,328		
9	Ditto (3-5 years)	100.0	11	7	5	149.15	164.31	136.35	11	100.0	7	100.0	5	100.0	1,359	1,391	1,293		
10	Ditto Heifer	80.0	9	4	5	98.57	118.80	99.49	6	66.6	4	100.0	5	100.0	1,302	1,179	1,243		
11	South Devon Cow	110.0	3	2	3	168.71	132.94	161.41	3	100.0	2	100.0	1	33.3	1,743	1,462	1,615		
12	Ditto (3-5 years)	91.7	5	2	3	130.77	121.66	131.75	5	100.0	2	100.0	3	100.0	1,566	1,270	1,443		
13	Ditto Heifer	73.3	4	3	—	99.0	87.34	—	4	100.0	3	100.0	—	—	1,368	1,298	—		
14	Devon Cow	85.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
15	Red Poll Cow	100.0	12	5	11	135.25	144.55	122.27	12	100.0	5	100.0	10	90.9	1,255	1,314	1,255		
16	Ditto (3-5 years)	83.3	9	4	2	119.21	91.75	92.55	9	100.0	2	50.0	2	100.0	1,171	1,192	1,216		

* Average for 13 animals only.

N.B.—All the above results are from cows milked thrice daily.

TABLE II.—SHOWING NUMBER OF COWS TESTED, AVERAGE POINTS GAINED AND NUMBER OF COWS ATTAINING THE ASSOCIATION'S STANDARD—1936 TO 1938—*Continued*.

Class.	Description.	B.D.F.A. Standard Points.	Number of Cows Tested.			Average Points Gained.			Number and Percentage of Cows above Standard.						Average Live Weight of Class.			
			1936	1937	1938	1936	1937	1938	1936	1937	1938	%	%	%	lbs.	1936	1937	1938
17	Red Poll Heifer...	66.7	6	4	4	84.08	76.83	74.77	5	83.3	3	75.0	1,079	1,176	1,146	lbs.	1937	1938
18	Welsh Black Cow	85.0	2	—	—	130.06	—	—	2	100.0	—	—	1,228	—	—	—	—	—
19	Ayrshire Cow ...	115.0	16	10	11	149.55	155.47	126.06	15	93.7	10	100.0	1,136	1,157	1,176	1,157	1,176	1,176
20	Ditto (3-5 years)	95.8	9	12	6	131.41	154.48	143.37	8	88.8	12	100.0	1,080	1,103	1,125	1,080	1,103	1,125
21	Ditto Heifer ...	76.7	11	15	10	108.08	113.29	112.54	11	100.0	14	93.3	1,070	1,009	1,036	1,070	1,009	1,036
22	Guernsey Cow ...	100.0	7	3	6	125.51	132.91	137.25	7	100.0	3	100.0	1,109	1,156	1,058	1,109	1,156	1,058
23	Ditto (3-5 years)	83.3	8	2	8	133.71	93.35	105.88	8	100.0	1	50.0	1,068	986	1,021	1,068	986	1,021
24	Ditto Heifer ...	66.7	4	5	7	98.19	80.05	92.56	3	75.0	3	60.0	937	841	906	937	841	906
25	Jersey Cow ...	95.0	18	10	24	125.84	128.07	115.40	18	100.0	10	100.0	900	948	*808	900	948	*808
26	Ditto (3-5 years)	70.2	14	13	10	106.28	109.98	107.53	13	92.9	13	100.0	900	805	838	900	805	838
27	Ditto Heifer ...	63.3	11	7	14	85.83	87.20	84.10	10	90.9	6	85.7	746	773	746	746	773	746
28	Kerry Cow ...	80.0	4	—	—	70.78	—	—	2	50.0	—	—	966	—	—	966	—	—
29	Ditto Heifer ...	53.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
30	Dexter Cow ...	65.0	4	—	5	83.75	—	75.87	4	100.0	—	—	694	—	638	694	—	638

* Average of 23 cows only.

N.B.—All the above results are from cows milked thrice daily.

TABLE III.—AVERAGE POINTS GAINED IN THE MILKING TRIALS EACH YEAR SINCE 1922.

YEAR.	D.S. Cow over 5 years.	D.S. Cow 3-5 years.	D.S. Heifer.	D.S. Non- ped. Cow.	D.S. Non- ped. Heifer.	L.R.S. Cow.	L.R.S. Heifer.	B.F. Cow over 5 years.	B.F. Cow 3-5 years.	R.F. Heifer.	S.D. over 5 years.	S.D. Cow 3-5 years.	S.D. Heifer.	Devon Cow.	R.P. Cow over 5 years.	R.P. Cow 3-5 years.
B.D.F.A. Class Standard ...	100-0	83-3	66-7	110-0	73-3	100-0	66-7	110-0	91-7	73-3	100-0	83-3	66-7	90-0	100-0	83-3
" " 1930	115-0	95-8	76-7	115-0	76-7	100-0	66-7	120-0	100-0	80-0	110-0	91-7	73-3	85-0	100-0	83-3
1922 ...	107-7	94-9	72-1	108-1	73-0	113-2	71-4	120-2	92-6	79-3	100-5	—	—	98-7	91-5	76-4
1923 ...	114-4	100-9	67-2	111-4	88-7	114-2	88-9	135-0	117-4	75-6	114-9	—	—	99-7	116-7	95-5
1924 ...	109-5	88-3	61-0	93-0	66-8	93-8	65-1	118-2	108-8	85-0	—	—	—	93-6	92-1	89-6
1925 ...	108-2	92-8	73-3	121-7	73-3	115-4	84-6	123-8	119-8	87-9	114-9	—	—	103-2	125-4	97-7
1926 ...	113-3	88-8	65-7	106-0	56-3†	121-1	87-7	120-6†	167-1†	80-9	—	—	—	113-2†	116-5	90-1
1928 ...	101-4	90-6	67-8	106-8	69-0	—	89-2	—	—	—	—	—	—	56-0	100-7	120-5†
1929 ...	120-8	111-4	77-7	120-1	89-3	137-2†	91-6	—	—	—	—	—	—	—	156-9†	—
1930 ...	107-2	91-6	68-5	111-0	72-8	92-2	78-7	—	—	81-5	—	—	66-4	88-4†	81-0†	96-4
1931 ...	94-0	93-8	73-2	82-5†	72-9	99-4†	88-0	—	—	—	—	—	—	75-3	—	85-5
1932 ...	86-1	53-7	—	122-7	76-4	—	—	—	—	—	—	—	—	—	—	—
Milked Twice Daily.																
Average Points of last 10 Shows.	106-3	91-1	69-6	108-3	73-2	110-8	82-8	123-6	120-9	81-7	110-1	—	66-4	91-0	111-2	94-6
1928...	127-6	95-1	75-3	—	73-6	128-8	95-7	125-6	133-4	88-0	127-4	—	—	—	84-6	126-6
1929...	147-0	112-3	79-2	106-8	—	125-7	83-2	153-0	136-4	78-6	130-7	—	—	138-4†	119-8	102-2
1930...	131-2	107-1	80-8	120-6†	59-9	121-9	—	125-5	131-4	85-5	135-6	—	—	122-5	119-0	—
1931...	139-7	120-7	87-6	164-9	91-9†	140-5	87-0	161-4	162-0	112-9	140-7	—	—	45-8†	147-2	130-0
1932...	138-7	121-6	94-6	133-2	67-8	96-7	80-5	142-7	122-6	104-1	125-0	—	100-8	—	113-9	110-9
1933...	115-8	116-8	80-3	126-9	99-3	104-9	86-9	155-8	123-4	91-2	103-2	120-4	95-7	—	113-4	105-0
1934...	144-1	122-6	90-7	139-3	97-5	103-6	104-7	163-1	145-7	91-2	134-8	132-2	67-4	111-1	138-7	108-7
1935...	139-6	122-2	86-5	126-5	88-2	121-3	96-7	151-4	127-1	86-6	126-7	135-0	92-2	107-4	124-3	112-9
1936...	135-1	131-3	101-4	134-2	97-1	126-7	91-1	158-9	149-1	98-6	168-7	139-8	99-0	—	135-3	119-2
1937...	128-9	124-6	89-2	144-4	89-1	132-1	104-1	169-6	164-3	118-8	132-9	121-6	87-3	—	144-5	91-7
1938...	142-0	102-9	97-7	129-0	—	111-5	—	153-3	136-4	99-5	101-4	131-8	—	—	122-3	92-6
Average Points of last 11 Shows	136-7	117-4	87-6	132-6	84-9	119-4	92-1	151-4	139-3	96-0	130-6	126-4	91-8	100-7	124-2	110-8

† Points for one animal only.

TABLE III.—AVERAGE POINTS GAINED IN THE MILKING TRIALS EACH YEAR SINCE 1922.—Continued.

YEAR.	R.P. Heifers.	R.A. Cow.	B.A. Heifers.	W.B. Cow.	A. Cow over 5 years.	A. Cow 3-5 years.	A. Heifers. 5 years.	G. Cow over 5 years.	G. Cow 3-5 years.	G. Heifers. 5 years.	J. Cow over 5 years.	J. Cow 3-5 years.	J. Heifers.	K. Cow.	K. Heifers.	Dexter Cow.	Dexter Heifer.
B.D.F.A. Class Standard	66.7	100.0	66.7	90.0	100.0	83.3	66.7	85.0	70.8	50.7	90.0	75.0	60.0	80.0	53.3	70.0	46.7
B.D.F.A. Class Standard, 1936	60.7	100.0	60.7	85.0	115.0	95.8	70.7	100.0	83.3	66.7	95.0	70.2	63.3	80.0	53.3	65.0	43.3
Milked Twice Daily	64.7	78.3	—	—	95.7	—	78.5	88.4	73.4	62.2	70.7	—	72.1	75.3	40.9	50.7	—
1922 ..	72.0	—	—	—	128.5	—	87.6	77.0	97.0	77.5	89.8	—	70.0	87.0	40.0	59.0	—
1923 ..	71.5	100.3	—	—	134.1	—	93.2	77.4	82.3	76.2	91.9	—	80.0	79.6	38.6	—	—
1924 ..	86.0	128.3	—	—	121.7	—	90.4	77.5	76.6	68.8	95.3	92.5	68.7	105.6	69.0	78.8	—
1925 ..	77.2	120.1	—	—	—	—	—	91.4	89.5	64.8	98.6	97.7	60.5	112.3	65.5	62.6	—
1926 ..	—	—	—	—	138.7†	—	63.1†	—	89.5	69.1†	103.9	101.3	73.1	84.6	51.8	105.8	—
1927 ..	—	—	—	—	—	—	—	—	132.3†	86.7	94.7	92.4	73.3	71.9	—	68.8	—
1928 ..	77.0†	130.0	—	—	—	—	—	115.6†	132.3†	84.5†	102.4	95.2	73.3	—	—	67.4	45.7
1929 ..	—	—	—	—	—	—	—	105.8†	97.3†	—	112.5	85.0	68.5	87.6	28.6†	52.1†	—
1930 ..	76.3†	103.6	—	—	—	—	—	98.1	90.0	63.4	109.3	101.0	76.2	93.0	—	55.2	—
1931 ..	—	—	—	—	—	—	—	135.2	82.5	—	—	—	—	—	—	—	—
Milked Once Daily	74.9	107.0	73.8	—	123.7	—	82.6	96.3	91.4	72.5	96.8	95.0	71.7	88.6	50.2	67.7	48.4
Average Points of last 10 Shows ...	74.6	—	—	—	138.4	—	104.1	111.2	99.9	77.4	114.3	93.5	97.2†	80.8	68.6	83.8	—
1928	88.0	—	—	—	143.9	—	104.1	143.7†	113.8	—	106.9	107.9	82.9	94.0	69.1	80.1	—
1929	72.4	—	—	97.2	127.4	—	90.8	113.5	114.6	110.0†	100.7	79.7	80.9	102.1†	71.4†	74.4	50.2†
1930	95.5	113.7†	115.2†	—	149.3	—	95.2	123.0	114.9	102.1	122.3	115.3	86.5	—	—	58.5	—
1931	—	—	—	—	162.8	—	101.4	109.7	93.0	107.0	112.3	115.8	86.6	—	—	76.4	—
1932	—	—	—	—	140.6	—	86.0	118.8	99.6	107.0	113.9	112.6	82.9	79.9	—	—	—
1933	82.0	—	—	106.3	151.1	—	105.4	112.5	102.7	92.7	116.0	109.3	87.5	102.2	62.0	92.2	57.4
1934	82.0	—	—	98.5	149.6	—	106.4	112.7	107.3	100.2	122.7	107.9	89.7	—	—	77.8	—
1935	91.7	—	—	110.1	149.6	—	108.7	125.5	133.7	98.2	125.8	106.3	85.8	70.8	—	83.8	—
1936	84.1	—	—	130.1	153.5	—	113.3	132.9	93.3	80.0	128.1	110.0	87.2	—	—	—	—
1937	76.8	—	—	—	127.0	—	112.5	137.3	165.9	92.6	115.4	107.5	84.1	—	—	75.9	—
1938	74.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Points of last 11 Shows	82.2	113.7†	115.2†	103.4	145.0	142.6	102.5	121.9	107.2	93.0	116.2	106.2	87.4	88.3	67.9	76.8	53.8

† Points for one animal only.

TABLE IV.—SHOWING THE HIGHEST POINTS GAINED EACH YEAR SINCE 1929.

YEAR.	D.S. Cow over 5 years.	D.S. Cow 3-5 years.	D.S. Heifer.	D.S. Non- ped. Cow.	D.S. Non- ped. Heifer.	L.R.S. Cow.	L.R.S. Heifer.	B.F. Cow over 5 years.	B.F. Cow 3-5 years.	R.F. Heifer.	S.D. Cow over 5 years.	S.D. Cow 3-5 years.	S.D. Heifer.	Devon Cow.	R.P. Cow over 5 years.	R.P. Cow 3-5 years.
1929*	147.0	134.4	91.2	151.2	104.2	137.2	99.9	—	170.0	97.4	183.6	—	—	138.4	156.9	—
1929†	149.5	127.1	91.3	108.1	86.8	157.7	103.1	186.5	—	—	—	—	—	138.4	166.8	120.4
1930*	125.7	143.0	93.9	128.8	89.9	98.7	98.7	—	—	81.5	—	—	79.0	88.4	81.0	130.5
1930†	147.8	103.3	102.5	120.6	59.9	137.6	97.3	169.8	162.0	125.1	108.5	—	—	45.8	154.2	135.2
1931*	119.8	130.8	95.1	82.5	88.3	99.4	89.1	—	—	—	—	—	—	—	—	94.5
1931†	149.8	111.8	111.8	168.4	90.8	176.0	94.4	191.4	171.3	133.9	173.5	—	109.8	—	177.3	147.7
1932*	186.8	68.2	—	122.7	81.8	—	—	—	—	—	—	—	—	93.5	—	—
1932†	160.1	162.3	112.9	177.3	113.9	125.9	102.3	215.3	175.6	113.3	140.0	158.7	114.8	—	155.5	144.7
1933*	158.5	164.7	96.9	155.1	107.4	156.5	109.9	213.9	152.9	124.5	114.5	123.2	80.7	—	130.5	124.3
1933†	174.0	156.0	132.7	189.6	111.9	131.4	118.3	201.9	164.4	109.8	150.0	145.2	111.9	160.2	164.9	134.3
1934*	171.4	157.7	107.3	155.9	113.6	147.9	126.2	181.5	165.3	108.8	149.4	162.2	107.3	183.8	160.6	143.8
1934†	175.8	181.1	113.3	167.0	123.3	190.4	119.9	208.6	192.5	140.4	189.7	164.3	109.7	—	158.1	187.2
1935*	146.5	149.5	115.2	151.5	102.6	142.8	126.4	193.8	193.0	130.4	133.8	131.8	95.5	—	185.6	114.3
1935†	178.8	130.5	110.9	155.1	—	137.8	—	184.5	164.0	124.8	120.0	142.9	—	—	152.4	97.2

YEAR.	R.P. Heifers.	B.A. Cow.	B.A. Heifers.	W.B. Cow.	A. Cow over 5 years.	A. Cow 3-5 years.	A. Heifers.	G. Cow over 5 years.	G. Cow 3-5 years.	G. Heifers.	J. Cow over 5 years.	J. Cow 3-5 years.	J. Heifers.	K. Cow.	K. Heifers.	Dexter Cow.	Dexter Heifers.
1929*	77.0	147.3	—	—	187.2	—	133.7	132.3	89.9	106.4	107.4	87.7	91.2	91.2	88.1	—	—
1929†	103.4	145.5	80.2	—	146.4	—	108.6	143.7	84.5	129.1	131.0	90.5	98.7	98.7	90.1	—	—
1930*	105.6	—	—	116.9	—	—	108.6	105.8	110.0	114.4	93.7	90.2	91.8	102.1	82.3	50.2	72.3
1930†	117.3	104.0	83.0	—	180.2	—	105.6	108.2	131.0	117.0	117.0	86.4	110.6	110.6	52.1	56.7	56.7
1931*	—	113.7	105.2	—	—	—	131.9	135.2	93.9	177.9	128.5	119.5	90.1	90.1	68.4	—	—
1931†	118.1	—	—	—	206.1	—	113.6	124.8	68.6	140.4	125.3	97.0	98.3	98.3	64.2	—	—
1932*	104.9	—	—	152.2	192.3	—	113.6	140.1	137.2	137.2	138.0	90.6	117.2	117.2	78.7	63.1	63.1
1932†	132.4	—	—	132.4	190.5	—	113.6	129.6	93.2	126.7	133.9	107.6	107.6	107.6	100.5	—	—
1933*	110.3	—	—	160.7	170.9	—	141.4	131.9	113.2	141.2	132.4	113.2	113.2	123.6	97.6	—	—
1933†	110.3	—	—	153.2	157.2	—	149.3	149.3	124.2	157.0	137.8	113.2	111.1	111.1	98.2	—	—
1934*	92.1	—	—	—	174.2	—	148.3	140.8	111.1	102.5	157.8	142.1	120.1	—	98.2	—	—
1934†	93.8	—	—	—	174.4	—	137.4	184.1	117.6	177.3	121.9	109.4	—	—	94.3	—	—

† Milked thrice daily.

* Milked twice daily.

TABLE V.—QUANTITY AND QUALITY OF MILK, 1938.

Class.	Breed.	No. of Competitors.	Average Weight of Milk.			Total Weight of Milk.			Average Composition of Milk.					
			Even.			Lbs.	Fat.			Solids—not Fat.			Total Solids.	
			Lbs.	Morn.	Aft.		Even.	Morn.	Aft.	Even.	Morn.	Aft.	Even.	Morn.
1	Dairy Shorthorn Cow—Pedigree	11	92.40	21.04	19.08	57.66	4.66	4.55	4.47	8.61	8.63	8.60	13.03	13.06
2	Ditto—Cow—3-5 years	11	17.73	16.08	17.31	51.12	3.37	3.90	3.68	8.79	8.72	8.78	12.30	12.31
3	Ditto—Heifer	5	13.00	14.62	14.84	44.46	4.03	4.17	4.02	8.82	8.85	8.72	12.85	13.02
4	Dairy Shorthorn Cow—Non-pedigree	4	19.68	18.05	19.08	57.66	4.66	4.55	4.47	8.61	8.63	8.60	13.03	13.06
6	Lincolnshire Red Cow	9	17.08	16.00	17.00	50.68	4.81	4.22	4.21	8.76	8.72	8.62	13.57	13.44
8	British Friesian Cow	9	26.66	26.38	26.80	79.84	3.69	3.55	4.03	8.51	8.72	8.52	12.93	12.92
9	Ditto—Cow—3-5 years	5	23.34	24.56	23.56	71.46	4.03	3.56	3.83	8.70	8.71	8.52	12.73	12.77
10	Ditto—Heifer	5	17.42	17.76	17.48	52.66	3.02	3.82	3.82	8.86	8.97	8.90	11.88	12.70
11	South Devon Cow	3	13.48	11.40	13.03	39.20	5.35	4.82	5.14	9.09	9.13	9.07	14.44	13.05
12	Ditto—Cow—3-5 years	3	19.30	18.10	19.77	57.17	5.10	4.29	4.56	9.09	9.36	9.26	14.50	13.82
13	Red Poll Cow	11	19.44	18.47	19.07	56.98	4.05	3.72	4.29	9.22	9.09	9.06	13.27	12.81
16	Ditto—Heifer	2	15.15	12.70	14.80	42.65	4.90	3.28	3.81	8.84	8.92	9.04	13.74	12.20
17	Ditto—Heifer	4	10.80	10.60	10.70	32.10	4.47	3.95	4.38	9.23	9.37	9.52	13.70	13.35
19	Ayrshire Cow	11	10.07	18.01	19.27	57.25	4.40	4.30	4.47	9.16	9.11	8.93	13.56	13.41
20	Ditto—Cow—3-5 years	6	20.78	21.13	21.53	63.44	4.40	4.34	4.65	9.19	9.28	9.05	13.59	13.62
21	Ditto—Heifer	10	16.93	16.75	16.90	50.68	4.19	4.59	4.32	9.12	9.16	9.07	13.81	13.39
22	Guernsey Cow	6	18.85	17.85	18.58	55.28	5.68	5.35	5.72	9.23	9.06	8.86	14.91	14.41
23	Ditto—Cow—3-5 years	8	14.53	15.74	15.21	45.48	4.27	4.59	4.45	9.18	8.81	8.80	13.45	13.25
24	Ditto—Heifer	7	12.47	12.68	13.36	37.91	4.72	4.34	4.76	9.12	9.03	9.06	13.84	13.37
25	Jersey Cow	24	15.05	14.73	16.10	46.78	5.34	5.48	6.05	8.94	9.04	9.00	14.28	14.52
26	Ditto—Cow—3-5 years	10	14.14	13.86	14.34	41.84	5.77	5.32	5.51	9.26	9.21	9.05	15.02	14.53
27	Ditto—Heifer	14	10.77	9.83	10.34	30.94	5.89	5.51	5.56	9.48	9.22	9.22	15.15	14.78
30	Dexter Cow	5	10.08	10.66	10.72	31.46	6.51	6.71	6.03	8.78	8.61	8.62	15.29	15.32

TABLE VI.—NUMBER OF ANIMALS YIELDING MILK DEFICIENT IN FAT AND OTHER SOLIDS.

BREED AND CLASS.		Less than 3 per cent. of Fat.										Less than 8·5 per cent. of Non-Fatty Solids.									
		1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
Dairy Shorthorns—Ped. over 5 years	...	0	1	2	3	3	1	0	0	2	1	0	1	0	0	1	2	0	0	0	1
Ditto, 3-5 years ...	...	0	2	3	4	2	1	3	3	4	2	1	2	2	1	3	1	1	2	1	2
Ditto, Heifers ...	...	0	1	1	5	1	2	0	1	3	0	1	1	1	0	0	2	0	0	0	0
Dairy Shorthorns—Non-Ped. Cows	...	0	1	1	0	3	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
Ditto, Heifers ...	...	0	1	1	3	1	0	1	1	2	1	0	1	0	0	1	1	0	3	0	1
Lancolin Red Shorthorn Cows ...	...	0	1	1	3	1	0	3	3	1	1	0	3	4	0	7	2	2	1	1	2
Ditto, Heifers ...	...	0	1	3	1	2	0	3	5	2	1	0	6	4	0	3	2	2	0	0	0
British Friesian Cows. Over 5 years	...	4	5	0	5	5	3	5	5	1	3	2	3	3	0	3	2	2	1	0	0
Ditto, 3-5 years ...	...	1	1	2	1	2	0	0	1	0	0	1	0	0	1	1	2	0	0	0	0
Ditto, Heifers ...	...	1	0	0	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
South Devon Cows. Over 5 years	...	0	0	0	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	—
Ditto, 3-5 years ...	...	0	0	1	2	1	0	1	1	0	—	0	0	1	1	—	0	2	—	—	—
Ditto, Heifers ...	...	2	1	2	0	2	0	2	1	0	2	1	0	1	2	0	0	4	0	0	0
Devon Cows. Over 5 years	...	0	4	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Red Poll Cows. Over 5 years	...	0	1	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ditto, 3-5 years ...	...	0	2	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ditto, Heifers ...	...	0	1	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Blue Albion Cows	...	0	0	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ditto, Heifers ...	...	0	0	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Welsh Black Cows	...	2	3	2	3	1	3	2	0	0	0	1	1	3	2	0	3	0	0	0	1
Ayrshire Cows. Over 5 years...	...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ditto, 3-5 years ...	...	2	1	1	1	1	2	2	1	0	0	1	1	2	1	0	0	0	0	0	0
Ditto, Heifers ...	...	0	1	0	1	0	2	1	0	0	1	1	2	0	0	1	0	0	0	1	0
Guernsey Cows. Over 5 years	...	0	1	2	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Ditto, 3-5 years ...	...	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ditto, Heifers ...	...	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
Jersey Cows. Over 5 years	...	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0
Ditto, 3-5 years ...	...	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Ditto, Heifers ...	...	0	0	0	0	0	0	0	3	—	—	1	0	0	0	0	0	0	0	—	—
Kerry Cows	...	1	0	1	2	—	0	—	—	—	—	0	2	0	0	—	0	0	0	—	—
Ditto, Heifers	...	0	0	0	0	3	0	1	0	—	0	0	0	1	0	0	0	0	0	—	—
Dexter Cows	...	0	0	0	—	—	—	—	—	—	—	0	0	0	0	—	0	0	—	—	—
Ditto, Heifers	...	0	1	2	2	0	—	—	—	—	—	0	0	0	0	0	0	0	—	—	—
Total	...	21	41	21	51	33	23	35	34	15	14	30	29	15	21	20	23	16	13	4	18
Number Tested	...	198	232	218	209	202	251	247	229	169	178	198	232	218	209	202	251	247	229	169	178

MILKING TRIALS, 1938.

CLASS I.—DAIRY SHORTHORN COW, ENTERED IN OR ACCEPTED FOR COATES' HERD BOOK. BORN ON OR PREVIOUS TO 1ST AUGUST, 1933. COWS ENTERED IN THIS CLASS MUST HAVE YIELDED A MINIMUM OF 8,000 LBS. AT FIVE YEARS OLD OR OVER, OR 6,000 LBS. AT UNDER FIVE YEARS OLD DURING A LACTATION PERIOD OF 45 WEEKS, RECORDED BY A RECOGNISED MILK RECORDING SOCIETY.

Number Name	1 Knells Elliot Fernleaf 2nd.	2 Retrice Cruggs 3rd.	3 Parkhouse Strawberry 16th.	6 Revels Glorious.
	Mar. 16, 1929, 1.387 July 11, 76	June 9, 1933, 1.278 Aug. 3, 53	Mar. 8, 1932, 1.609 Sept. 1, 24	Jan. 15, 1933, 1.111 Aug. 28, 28
Born	Even. 50.2	Even. 20.9	Even. 22.4	Even. 23.5
Live weight, in lbs.	Morn. 16.3	Morn. 20.3	Morn. 23.7	Morn. 23.5
Last Calved	Aft. 16.9	Aft. 20.6	Aft. 22.5	Aft. 23.9
Days since Calving	Even. 5.37	Even. 3.87	Even. 4.21	Even. 3.85
Weight of Milk	Morn. 3.63	Morn. 3.76	Morn. 3.75	Morn. 3.39
Percentage	Aft. 4.46	Aft. 4.42	Aft. 4.37	Aft. 3.31
Composition of	Even. 8.85	Even. 8.51	Even. 8.83	Even. 8.03
the Milk	Morn. 8.51	Morn. 8.86	Morn. 8.85	Morn. 8.99
Total Solids	Aft. 12.14	Aft. 12.02	Aft. 13.04	Aft. 12.38
Actual weight of Fat, in lbs.	Even. 14.22	Even. 12.38	Even. 13.04	Even. 12.38
Actual weight of Solids other than Fat, in lbs.	Morn. 1.055	Morn. 0.869	Morn. 0.943	Morn. 0.905
Points—	Aft. 1.79	Aft. 1.78	Aft. 1.98	Aft. 2.03
For weight of Milk (lbs.)	Even. 53.40	Even. 61.80	Even. 68.90	Even. 70.90
For weight of Fat (lbs. × 50)	Morn. 48.62	Morn. 49.66	Morn. 56.30	Morn. 49.86
For weight of Solids other than Fat (lbs. × 4)	Aft. 18.48	Aft. 21.44	Aft. 24.44	Aft. 25.16
Total Points for Milk	120.50	132.90	140.34	145.92
Deductions	—	—	—	—
TOTAL POINTS GAINED FOR MILK	120.50	132.90	140.34	145.92
Points for time since Calving	3.60	1.30	—	—
TOTAL POINTS GAINED	124.10	134.20	149.34	145.92
Points gained for Milk per 1,000 lbs. live weight	80.88	103.99	92.82	131.34
Points for time since Calving	3.60	1.30	—	—
Total Points per 1,000 lbs. live weight	90.48	104.12	92.82	131.34
Remarks and Awards	Highly Commended.	Reserve.	4th Prize.	5th Prize.

CLASS 1.—DAIRY SHORTHORN COW (BORN ON OR PREVIOUS TO 1ST AUGUST, 1933.)—Continued.

Number Name ...	...	...	...	...	...	...	8		9	10		11
							Greatford 9th.	Granny	Frieth Tiny 4th.	Histon 3th.	Duchess	Histon Barrington 1th.
Born ...	...	...	...	...	...	...	Jan. 5, 1933, 1,444		Aug. 28, 1932, 1,409	May 15, 1933, 1,148		May 1, 1933, 1,517
Live weight, in lbs. ...	...	...	...	...	...	...	Aug. 18, 38		Sept. 14, 11	July 16, 71		Sept. 13, 12
Last Calved ...	...	...	...	...	...	...
Days since Calving ...	...	...	...	...	...	...
Weight of Milk	...	...	...	...	...	...	Even. 20.3	Morn. 18.8	Even. 23.1	Morn. 22.8	Even. 22.0	Morn. 18.8
Percentage { Fat ...	...	...	...	...	...	...	4.39	3.83	5.64	7.37	3.73	4.47
Composition of { Solids other than Fat ...	...	...	...	...	...	...	8.03	8.77	9.51	9.11	8.53	9.23
the Milk { Total Solids ...	...	...	...	...	...	...	13.32	12.60	15.12	16.88	12.26	13.70
Actual weight of Fat, in lbs. ...	...	...	...	...	...	...	0.801	0.720	1.303	1.680	0.844	0.809
Actual weight of Solids other than Fat, in lbs. ...	...	...	...	...	...	...	1.81	1.65	2.19	2.17	1.88	1.67
Points—	...	...	...	...	...	...
For weight of Milk (lbs.) ...	...	...	...	...	...	...	57.10		68.70		63.70	55.80
For weight of Fat (lbs. $\times 20$) ...	...	...	...	...	...	...	40.18		84.32		51.18	54.74
For weight of Solids other than Fat (lbs. $\times 4$) ...	...	...	...	...	...	...	20.28		25.76		21.88	20.56
Total Points for Milk	...	...	...	...	...	...	126.56		178.78		136.76	131.10
Deductions ...	...	...	...	...	...	...	—		—		—	—
TOTAL POINTS GAINED FOR MILK ...	...	...	...	...	...	...	126.56		178.78		136.76	131.10
Points for time since Calving	...	...	...	...	...	...	—		—		3.10	—
TOTAL POINTS GAINED	...	...	...	...	...	...	126.56		178.78		139.86	131.10
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	...	87.65		121.70		119.13	86.42
Points for time since Calving ...	...	...	...	...	...	...	—		—		3.10	—
Total Points per 1,000 lbs. live weight	...	...	...	...	...	...	87.65		121.70		122.23	86.42
Remarks and Awards	...	...	...	...	...	...	Highly Commended.		1st Prize.		6th Prize.	Highly Commended.

CLASS 1.—DAIRY SHORTHORN COW (BORN ON OR PREVIOUS TO 1ST AUGUST, 1933)—Continued.

Number Name	...	...	...	...	...	...	...	12			13			15		
								Greاتفew Junnifa 2nd.			Lockinge Fairy 8th.			Whittingslow Podger.		
Born ...	...	...	...	...	...	...	...	Sept. 25, 1932.	1,364	...	Oct. 30, 1931.	1,405	...	Mar. 16, 1933.	1,403	...
Live weight, in lbs. ...	...	...	...	...	...	...	...	July 16.	71	...	Aug. 21.	35	...	July 27.	60	...
Last Calved ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Days since Calving ...	...	...	...	...	...	...	...	Even.	Morn.	Aft.	Even.	Morn.	Aft.	Even.	Morn.	Aft.
Weight of Milk	...	...	...	...	...	...	...	29.2	20.4	22.0	24.2	22.9	22.5	23.3	22.9	22.7
Percentage of Fat	...	...	...	...	...	...	...	2.81	3.56	4.01	4.19	4.01	4.34	4.12	4.09	3.96
Composition of Solids other than Fat	...	...	...	...	...	...	...	8.47	8.70	8.53	8.59	8.53	8.58	8.58	8.57	8.52
the Milk	...	...	...	...	...	...	...	11.28	12.20	12.54	12.78	12.54	12.92	12.70	12.66	12.48
Actual weight of Fat, in lbs.	...	...	...	...	...	...	...	—	—	—	1.014	0.018	0.977	0.968	0.937	0.899
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	...	...	—	—	—	2.08	1.95	1.93	2.02	1.96	1.93
Points—	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
For weight of Milk (lbs.)	...	...	...	...	...	...	...	—	—	—	69.60	—	—	60.10	—	—
For weight of Fat (lbs. × 20)	...	...	...	...	...	...	...	—	—	—	58.18	—	—	56.08	—	—
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	...	...	—	—	—	23.84	—	—	23.64	—	—
Total Points for Milk...	...	...	...	...	...	...	...	—	—	—	151.62	—	—	148.82	—	—
Deductions ...	...	...	...	...	...	...	...	—	—	—	—	—	—	—	—	—
TOTAL POINTS GAINED FOR MILK ...	...	...	...	...	...	...	...	—	—	—	151.62	—	—	148.82	—	—
Points for time since Calving	...	...	...	...	...	...	...	—	—	—	—	—	—	2.00	—	—
TOTAL POINTS GAINED	...	...	...	...	...	...	...	—	—	—	151.62	—	—	150.82	—	—
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	...	...	—	—	—	107.91	—	—	106.07	—	—
Points for time since Calving	...	...	...	...	...	...	...	—	—	—	—	—	—	2.00	—	—
Total Points per 1,000 lbs. live weight	...	...	...	...	...	...	...	—	—	—	107.91	—	—	108.07	—	—
Remarks and Awards	...	...	...	...	...	...	...	Disqualified.	...	...	2nd Prize.	...	...	3rd Prize.	...	...

CLASS 2.—DAIRY SHORTHORN COW, ENTERED IN OR ACCEPTED FOR COATES' HERD BOOK. BORN AFTER 1ST AUGUST, 1933, AND WHICH HAS PRODUCED TWO OR MORE CALVES.

Number Name ...	...	...	...	...	...	17 Redrice Darling 10th.	20 Eaton Rosebud 10th.			21 Revels Butterfly 2nd.			23 Revels Lotite 2nd.		
							Even.	Morn.	Aft.	Even.	Morn.	Aft.	Even.	Morn.	Aft.
Born ...	...	...	...	...	...	June 28, 1934, 1.410	May 28, 1934, 1.185			Oct. 12, 1934, 1.220			Sept. 7, 1934, 1.047		
Live weight, in lbs. ...	...	...	...	...	...	May 19, 129	Aug. 11, 45			Sept. 9, 16			Aug. 27, 29		
Last Calved ...	...	...	...	...	...					
Days since Calving ...	...	...	...	...	...					
Weight of Milk	...	...	...	...	...	Even. 14.1	Morn. 13.3	Aft. 13.1		Even. 18.8	Morn. 19.2	Aft. 18.9	Even. 22.0	Morn. 17.2	Aft. 22.0
Percentage { Fat	...	...	...	...	...	3.45	3.82	3.13		3.64	4.59	3.94	3.30	4.58	3.52
Composition of { Solids other than Fat	...	...	...	...	...	8.25	8.42	8.29		8.96	8.25	9.12	8.72	8.82	8.60
the Milk { Total Solids	...	...	...	...	...	11.70	12.24	11.42		12.60	13.84	13.06	12.02	13.40	12.12
Actual weight of Fat, in lbs.	...	...	...	...	...	0.486	0.508	0.410		0.684	0.881	0.745	0.726	0.788	0.774
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	1.16	1.12	1.09		1.68	1.78	1.72	1.92	1.62	1.89
Points	...	...	...	...	...					
For weight of Milk (lbs.)	...	...	...	...	...	40.50			45.50	56.90			61.20		
For weight of Fat (lbs. × 20)	...	...	...	...	...	28.08			35.84	46.20			45.76		
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	13.48			15.96	20.72			21.32		
Total Points for Milk	...	...	...	...	...	82.06			97.30	123.82			128.28		
Deductions ...	...	...	...	...	...	30.00			—	—			—		
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	52.06			97.30	123.82			128.28		
Points for time since Calving	...	...	...	...	...	8.90			0.50	—			—		
TOTAL POINTS GAINED	...	...	...	...	...	60.96			97.80	123.82			128.28		
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	36.69			82.11	101.49			122.52		
Points for time since Calving	...	...	...	...	...	8.90			0.50	—			—		
Total Points per 1,000 lbs. live weight	...	...	...	...	...	45.59			82.61	101.49			122.52		
Remarks and Awards	...	...	...	...	...		Highly Commended.			3rd Prize.			2nd Prize.		

CLASS 2.—DAIRY SHORTHORN COW (BORN AFTER 1ST AUGUST, 1933)—Continued.

Number Name	...	...	...	...	...	24 Buryhill Lady 2nd.	25 Histon Royal Duchess 6th.	27 Greatrew Janette 8th.	28 Greatrew Waterloo Baroness.
Born ...	...	...	...	...	...	Aug. 18, 1933, 1.377	Jan. 17, 1935, 1.171	Jan. 22, 1935, 1.004	July 20, 1934, 1.293
Last Calved ...	...	...	...	...	...	Sept. 2, 23	Sept. 8, 17	Sept. 4, 21	Aug. 15, 41
Days since Calving	...	...	...	...	...	Even. Morn. Aft. 21.6 14.3 25.3	Even. Morn. Aft. 13.7 17.9 16.8	Even. Morn. Aft. 17.4 17.2 16.3	Even. Morn. Aft. 15.8 15.9 16.3
Weight of Milk	...	...	...	...	...	3.62 2.61 3.11	3.29 3.37 3.28	4.77 4.88 4.21	3.36 3.36 3.47
Percentage of Fat	...	...	...	...	...	9.06 9.13 8.95	8.50 8.57 8.44	9.17 8.88 8.87	9.16 9.28 9.15
Composition of Solids other than Fat	...	...	...	...	...	12.68 11.74 12.06	11.88 11.94 11.72	13.94 13.76 13.08	12.52 12.64 12.62
the Milk Total Solids	...	...	...	...	...	0.782 0.378 0.787	0.648 0.603 0.551	0.830 0.839 0.686	0.531 0.534 0.566
Actual weight of Fat, in lbs.	...	...	...	...	...	1.96 1.32 2.26	1.69 1.53 1.42	1.60 1.53 1.45	1.45 1.48 1.49
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	...	...	...	...
Points—	...	...	...	...	...	61.40	54.40	50.90	48.00
For weight of Milk (lbs.)	...	...	...	...	...	38.94	36.04	47.10	32.62
For weight of Fat (lbs. × 20)	...	...	...	...	...	22.16	18.56	18.32	17.08
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	...	...	...	...
Total Points for Milk...	...	...	...	...	...	122.50	109.00	116.32	98.30
Deductions ...	...	...	...	...	...	10.00	10.00	—	—
TOTAL POINTS GAINED FOR MILK ...	...	...	...	...	...	112.50	99.00	116.32	98.30
Points for time since Calving	...	...	...	...	...	—	—	—	0.10
TOTAL POINTS GAINED	...	...	...	...	...	112.50	99.00	116.32	98.40
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	81.70	84.54	109.32	76.02
Points for time since Calving ...	...	...	...	...	...	—	—	—	0.10
Total Points per 1,000 lbs. live weight	...	...	...	...	...	81.70	84.54	109.32	76.12
Remarks and Awards	...	...	...	...	...	6th Prize.	Reserve.	5th Prize.	Highly Commended.

CLASS 3.—DAIRY SHORTHORN HEIFER (BORN ON OR AFTER 1ST AUGUST, 1935)—Continued.

Number Name	...	...	...	...	...	...	44 Huxham Ladybird.	46 Lockinge Buttercup 7th.
Born	...	...	...	...	...	...	June 4, 1936, 1,064	Aug. 20, 1935, 952
Live weight, in lbs.	...	...	...	...	...	...	Sept. 10, 15	Aug. 18, 38
Last Calved	...	...	...	...	...	...
Days since Calving	...	...	...	...	...	...
Weight of Milk	...	...	...	...	...	...	Even. 15.4	Even. 12.5
Percentage Fat	...	...	...	...	...	...	Morn. 14.7	Morn. 13.1
Composition of { Fat	...	...	...	...	...	...	Aft. 15.2	Aft. 12.9
the Milk { Solids other than Fat	...	...	...	...	...	...
Actual weight of Fat, in lbs.	...	...	...	...	...	...	3.80	4.03
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	...	3.97	4.10
Points—	...	...	...	...	...	...	8.12	8.77
For weight of Milk (lbs.)	...	...	...	...	...	...	8.13	8.40
For weight of Fat (lbs. × 20)	...	...	...	...	...	...	12.36	12.70
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	...	0.585	0.537
Total Points for Milk...	...	...	...	...	...	...	1.40	1.13
Deductions	...	...	...	...	...	...	1.34	1.10
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	...	45.30	38.50
Points for time since Calving	...	...	...	...	...	...	34.24	31.24
TOTAL POINTS GAINED	...	...	...	...	...	...	16.32	13.32
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	...	95.86	89.06
Points for time since Calving	...	...	...	...	...	...	—	—
Total Points per 1,000 lbs. live weight	...	...	...	...	...	...	95.86	83.06
Remarks and Awards	...	...	...	...	...	...	90.00	87.25
	—	—
	...	...	...	...	...	...	90.00	87.25
	...	...	...	...	...	...	3rd Prize.	5th Prize.

CLASS 4.—DAIRY SHORTHORN COW, NOT ELIGIBLE FOR CLASSES 1 OR 2. COWS ENTERED IN THIS CLASS MUST HAVE YIELDED A MINIMUM OF 8,000 LBS. AT FIVE YEARS OLD OR OVER, OR 6,000 LBS. AT UNDER FIVE YEARS OLD DURING A LACTATION PERIOD OF 45 WEEKS, RECORDED BY A RECOGNISED MILK RECORDING SOCIETY.

Number Name ...	...	...	...	...	...	48 Cantab. Star 13th.	49 Tulip 2nd.	50 Fell Pail.	51 Lady.
Born ...	...	...	...	...	...	Sept. 23, 1933, 1.415	May 11, 1933, 1.364	Unknown. 1.223	Mar. 1934, 1.534
Live weight, in lbs. ...	...	...	...	...	...	Aug. 30, 26	Sept. 9, 16	Sept. 15, 10	Sept. 12, 13
Last Calved ...	...	...	...	...	...	...	...	...	...
Days since Calving ...	...	...	...	...	...	...	...	...	...
Weight of Milk	...	...	...	...	...	Even. 22.2 Morn. 20.4 Aft. 21.5	Even. 18.2 Morn. 18.3 Aft. 18.1	Even. 15.1 Morn. 13.9 Aft. 14.1	Even. 23.2 Morn. 23.2 Aft. 22.4
Percentage { Fat Composition of { Solids other than Fat the Milk { Total Solids	...	...	...	...	...	3.74 4.00 4.42 8.50 8.70 8.54 12.24 12.70 12.96	3.55 3.07 3.65 8.50 8.51 8.51 12.05 12.18 12.16	6.73 5.95 5.36 8.75 8.67 8.80 15.48 14.62 14.16	4.00 4.59 4.45 8.70 8.65 8.53 13.30 13.24 12.98
Actual weight of Fat, in lbs. ...	...	...	...	...	...	0.880 0.816 0.950	0.646 0.672 0.661	1.016 0.827 0.756	1.067 1.065 0.997
Actual weight of Solids other than Fat, in lbs. ...	...	...	...	...	...	1.89 1.77 1.84	1.55 1.56 1.54	1.32 1.21 1.24	2.02 2.01 1.91
Points	...	...	...	...	...	...	...	...	...
For weight of Milk (lbs.)	...	...	...	...	...	64.10	54.60	43.10	68.80
For weight of Fat (lbs. × 20)	...	...	...	...	...	51.92	39.58	51.98	62.58
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	22.00	18.00	15.08	23.76
Total Points for Milk	...	...	...	...	...	138.02	112.78	110.16	155.14
Deductions ...	...	...	...	...	...	—	—	—	—
TOTAL POINTS GAINED FOR MILK ...	...	...	...	...	...	138.02	112.78	110.16	155.14
Points for time since Calving	...	...	...	...	...	—	—	—	—
TOTAL POINTS GAINED	...	...	...	...	...	138.02	112.78	110.16	155.14
Points gained for Milk per 1,000 lbs. live weight ...	...	...	...	...	...	97.54	82.68	89.34	101.13
Points for time since Calving ...	...	...	...	...	...	—	—	—	—
Total Points per 1,000 lbs. live weight	...	...	...	...	...	97.54	82.68	89.34	101.13
Remarks and Awards	...	...	...	...	...	2nd Prize.			1st Prize.

CLASS 6.—LINCOLNSHIRE RED SHORTHORN COW, ENTERED IN OR ACCEPTED FOR THE HERD BOOK. COWS ENTERED IN THIS CLASS MUST HAVE YIELDED A MINIMUM OF 7,000 LBS. AT FIVE YEARS OLD OR OVER, OR 5,250 LBS. AT UNDER FIVE YEARS OLD EITHER DURING A LACTATION PERIOD OF 45 WEEKS OR FOR ANY ONE COMPLETED YEAR OF A RECOGNISED MILK RECORDING SOCIETY.

Number Name ...	52 Bendish Charm 24th.	54 Histon Ashleaf 13th.	55 Histon Dairymaid 92nd.	56 Histon Fanny 8th.
Born ...	Aug. 26, 1934. 1,406	July 14, 1932. 1,432	Sept. 17, 1934. 1,167	Dec. 3, 1930. 1,485
Live weight, in lbs. ...	Aug. 24. 32	June 13. 104	June 7. 110	Sept. 14. 11
Last Calved ...				
Days since Calving ...				
Weight of Milk	Even. 10.6 Morn. 14.9 Aft. 19.3	Even. 17.0 Morn. 15.9 Aft. 15.3	Even. 14.9 Morn. 13.6 Aft. 14.4	Even. 19.8 Morn. 19.6 Aft. 21.4
Percentage { Fat Composition of { Solids other than Fat the Milk { Total Solids ...	5.34 8.50 12.84	4.18 8.06 12.84	5.93 8.89 14.82	3.79 8.99 12.78
Actual weight of Fat, in lbs. ...	0.886 1.41	0.711 1.47	0.884 1.32	0.750 1.78
Actual weight of Solids other than Fat, in lbs. ...	0.477 1.25	0.660 1.39	0.615 1.18	0.984 1.77
Points—				
For weight of Milk (lbs.)	50.80	48.20	42.90	60.80
For weight of Fat (lbs. $\times 20$)	42.90	40.18	40.98	55.22
For weight of Solids other than Fat (lbs. $\times 4$)	17.08	16.72	15.00	21.80
Total Points for Milk	110.78	105.10	98.88	137.82
Deductions ...	20.00	—	—	—
TOTAL POINTS GAINED FOR MILK ...	90.78	105.10	98.88	137.82
Points for time since Calving ...	—	6.40	7.00	—
TOTAL POINTS GAINED	90.78	111.50	105.88	137.82
Points gained for Milk per 1,000 lbs. live weight...	64.57	73.39	84.73	92.81
Points for time since Calving ...	—	6.40	7.00	—
Total Points per 1,000 lbs. live weight	64.57	79.79	91.73	92.81
Remarks and Awards		2nd Prize.	3rd Prize.	1st Prize.

CLASS 8.—BRITISH FRIESIAN COW, ENTERED IN OR ACCEPTED FOR THE HERD BOOK OR THE SUPPLEMENTARY REGISTER. BORN ON OR PREVIOUS TO 1ST AUGUST, 1933. COWS ENTERED IN THIS CLASS MUST HAVE YIELDED A MINIMUM OF 8,000 LBS. AT FIVE YEARS OLD OR OVER, OR 6,000 LBS. AT UNDER FIVE YEARS OLD EITHER DURING A LACTATION PERIOD OF 45 WEEKS OR FOR ANY ONE COMPLETED YEAR OF A RECOGNISED MILK RECORDING SOCIETY.

Number Name	58 Royal Akke 19th.	59 Eglington Miedema 4th.	60 Terling Eclipse 32nd.	63 Terling Collona 17th.
	Even. Morn. Aft.	Even. Morn. Aft.	Even. Morn. Aft.	Even. Morn. Aft.
Born ...	Dec. 5, 1932. 1.552 Aug. 18, 38	Sept. 20, 1929, 1.324 Aug. 8, 48	July 2, 1933, 1.321 Aug. 2, 54	Oct. 2, 1932, 1.231 Sept. 2, 23
Live weight, in lbs. ...	...	...	...	...
Last Calved ...	...	...	...	...
Days since Calving ...	...	...	...	...
Weight of Milk	...	...	...	...
Percentage { Fat	...	...	...	...
Composition of { Solids other than Fat	...	...	...	...
the Milk { Total Solids	...	...	...	...
Actual weight of Fat, in lbs. ...	...	...	...	...
Actual weight of Solids other than Fat, in lbs. ...	...	...	...	...
Points—	...	...	...	...
For weight of Milk (lbs.)	88.50	79.60	80.40	77.30
For weight of Fat (lbs. × 20)	63.86	55.18	61.52	60.18
For weight of Solids other than Fat (lbs. × 4)	30.16	26.36	27.36	27.52
Total Points for Milk...	182.52	161.14	169.28	165.00
Deductions ...	10.00	30.00	—	—
TOTAL POINTS GAINED FOR MILK ...	172.52	131.14	169.28	165.00
Points for time since Calving ...	—	0.80	1.40	—
TOTAL POINTS GAINED	172.52	131.94	170.68	165.00
Points gained for Milk per 1,000 lbs. live weight...	111.16	99.05	128.15	134.04
Points for time since Calving ...	—	0.80	1.40	—
Total Points per 1,000 lbs. live weight	111.16	99.85	129.55	134.04
Remarks and Awards	4th Prize.		5th Prize.	6th Prize.

CLASS 8.—BRITISH FRIESIAN COW (BORN ON OR PREVIOUS TO 1ST AUGUST, 1933)—Continued.

Number Name ...	...	...	...	...	...	64 Denchworth Annie.	65 Hurdlesgrove Pel Betty 2nd.	66 Lavenham Cactus 27th.
						Nov. 10, 1932. 1,268 Aug. 31. 25	Oct. 31, 1931. 1,242 Sept. 12. 13	Nov. 4, 1930. 1,430 Aug. 18. 38
Born ...	...	...	...	...	...	Even. Morn. Aft.	Even. Morn. Aft.	Even. Morn. Aft.
Live weight, in lbs. ...	...	...	...	...	...	24.2 25.1 23.6	27.6 23.3 22.6	20.1 33.0 28.0
Last Calved ...	...	...	...	...	...	8.20 8.26 4.50	5.35 5.27 4.78	3.14 3.30 3.00
Days since Calving ...	...	...	...	...	...	8.60 8.50 8.38	8.73 8.70 8.74	8.56 8.62 8.52
Weight of Milk ...	...	...	...	...	...	11.90 11.70 12.88	14.08 14.03 13.52	11.70 11.92 11.52
Percentage (Fat ...)	...	...	...	...	...	0.789 0.818 1.002	1.477 1.228 1.080	0.914 1.080 0.840
Composition of ...	...	...	...	...	...	2.08 2.13 1.98	2.41 2.05 1.95	2.40 2.84 2.30
Actual weight of Fat, in lbs. ...	...	...	...	...	...	72.90	73.50	90.10
Actual weight of Solids other than Fat, in lbs. ...	...	...	...	...	...	53.58	79.70	56.86
Points—	...	...	...	...	...	24.76	25.76	30.88
For weight of Milk (lbs.)	...	...	...	...	...	151.24	174.96	177.84
For weight of Fat (lbs. × 20)	...	...	...	...	...	10.00	—	—
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	141.24	174.96	177.84
Total Points for Milk	...	...	...	...	...	—	—	—
Deductions ...	...	...	...	...	...	—	—	—
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	141.24	174.96	177.84
Points for time since Calving	...	...	...	...	...	—	—	—
TOTAL POINTS GAINED	...	...	...	...	...	141.24	174.96	177.84
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	111.39	140.87	124.36
Points for time since Calving	...	...	...	...	...	—	—	—
Total Points per 1,000 lbs. live weight	...	...	...	...	...	111.39	140.87	124.36
Remarks and Awards	...	...	...	...	...	Reserve.	3rd Prize.	2nd Prize.

CLASS 9.—BRITISH FRIESIAN COW, ENTERED IN OR ACCEPTED FOR HERD BOOK OR THE SUPPLEMENTARY REGISTER. BORN AFTER 1ST AUGUST, 1933, AND PREVIOUS TO 1ST AUGUST, 1935.

Number Name	75			78			80		
	Terling Eclipse 34th.			Lavenham Lilac 8th.			Egham Thelma 10th.		
Born ...	Jan. 20, 1934.			Mar. 30, 1934.			Sept. 4, 1934.		
Live weight, in lbs. ...	1,238			1,276			1,317		
Last Calved ...	July 25.			Sept. 9.			Aug. 17.		
Days since Calving	62			16			39		
Weight of Milk	Even.	Morn.	Aft.	Even.	Morn.	Aft.	Morn.	Even.	Aft.
Percentage (Fat	20.2	22.5	22.2	27.5	25.2	21.3	25.3	30.7	27.2
Composition of Solids other than Fat	3.61	3.72	4.15	2.93	4.78	3.54	4.41	3.30	3.64
the Milk { Total Solids	8.51	8.40	8.31	8.87	9.06	8.56	8.61	8.56	8.46
Actual weight of Fat, in lbs. ...	12.12	12.12	12.46	11.80	13.84	12.10	13.02	11.86	12.10
Actual weight of Solids other than Fat, in lbs. ...	0.729	0.837	0.921	0.806	1.205	0.754	1.116	1.013	0.990
Points—	1.72	1.80	1.84	2.44	2.28	1.82	2.18	2.63	2.30
For weight of Milk (lbs.)	64.90			74.00			83.20		
For weight of Fat (lbs. × 20)	49.74			55.30			62.38		
For weight of Solids other than Fat (lbs. × 4)	21.80			26.16			28.44		
Total Points for Milk...	136.44			155.46			174.02		
Deductions ...	20.00			10.00			10.00		
TOTAL POINTS GAINED FOR MILK ...	116.44			145.46			164.02		
Points for time since Calving	2.20			—			—		
TOTAL POINTS GAINED	118.64			145.46			164.02		
Points gained for Milk per 1,000 lbs. live weight...	94.05			114.00			124.54		
Points for time since Calving	2.20			—			—		
Total Points per 1,000 lbs. live weight	96.25			114.00			124.54		
Remarks and Awards	5th Prize.			2nd Prize.			1st Prize.		

CLASS 10.—BRITISH FRIESIAN HEIFER (BORN ON OR AFTER 1ST AUGUST, 1935)—Continued.

Number Name ...	...	...	...	...	...	...	...	95		96
								Fimloch Honey 2nd.	Fimloch Silkie.	
Born ...	...	...	...	...	...	...	...	Oct. 17, 1935, 1,350	Mar. 14, 1936, 1,178	...
Live weight, in lbs. ...	...	...	...	...	...	...	...	Aug. 10, 46	Aug. 9, 47	...
Last Calved ...	...	...	...	...	...	...	...	...	...	...
Days since Calving ...	...	...	...	...	...	...	...	...	...	...
Weight of Milk	...	...	...	...	...	...	...	Even. Morn. Aft.	Even. Morn. Aft.	...
Percentage { Fat	...	...	...	...	...	...	...	16.4 16.4 16.5	18.9 19.2 18.7	...
Composition of { Solids other than Fat	...	...	...	...	...	...	...	3.41 4.13 3.75	3.53 4.75 3.85	...
the Milk { Total Solids	...	...	...	...	...	...	...	9.01 9.11 8.69	9.19 9.35 9.65	...
Actual weight of Fat, in lbs. ...	...	...	...	...	...	...	...	12.42 13.24 12.44	12.72 14.10 13.50	...
Actual weight of Solids other than Fat, in lbs. ...	...	...	...	...	...	...	...	0.559 0.677 0.619	0.667 0.912 0.720	...
Points—	...	...	...	...	...	...	...	1.48 1.49 1.43	1.74 1.80 1.80	...
For weight of Milk (lbs.)	...	...	...	...	...	...	...	49.30	56.80	...
For weight of Fat (lbs. $\times 20$)	...	...	...	...	...	...	...	37.10	45.48	...
For weight of Solids other than Fat (lbs. $\times 4$)	...	...	...	...	...	...	...	17.60	21.36	...
Total Points for Milk	...	...	...	...	...	...	...	104.00	124.14	...
Deductions	...	...	...	...	...	...	...	—	—	...
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	...	...	104.00	124.14	...
Points for time since Calving	...	...	...	...	...	...	...	0.60	0.70	...
TOTAL POINTS GAINED	...	...	...	...	...	...	...	104.60	124.84	...
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	...	...	77.04	105.38	...
Points for time since Calving	...	...	...	...	...	...	...	0.60	0.70	...
Total Points per 1,000 lbs. live weight	...	...	...	...	...	...	...	77.64	106.08	...
Remarks and Awards	...	...	...	...	...	...	...	2nd Prize.	1st Prize.	...

CLASS 12.—SOUTH DEVON COW, ENTERED IN OR ACCEPTED FOR THE HERD BOOK. BORN AFTER 1ST AUGUST, 1933, AND PREVIOUS TO 1ST AUGUST, 1935.

Number Name ...	...	...	...	...	...	102 Berry Hilda 9th.	105 Winsor Alma 2nd.	106 Westerland Anne.
Born ...	...	...	...	...	...	Sept. 25, 1933. 1,583	Sept. 20, 1933. 1,316	Dec. 14, 1933. 1,431
Live weight, in lbs. ...	...	...	...	...	...	Aug. 20. 36	Sept. 9. 16	Aug. 30. 26
Last Calved ...	...	...	...	...	...
Days since Calving ...	...	...	...	...	...
Weight of Milk	...	...	...	...	...	Even. Morn. Aft. 16.9 15.7 16.8	Even. Morn. Aft. 19.3 19.0 20.30	Even. Morn. Aft. 21.7 19.6 22.2
Percentage { Fat	...	...	...	...	...	5.08 4.54 3.90	5.60 4.76 5.41	4.02 3.57 4.36
Composition of { Solids other than Fat	...	...	...	...	...	9.32 9.24 9.06	9.68 9.72 9.57	9.20 9.13 9.11
the Milk { Total Solids	...	...	...	...	...	14.40 13.78 12.96	13.28 14.48 14.88	13.82 12.70 13.50
Actual weight of Fat, in lbs.	...	...	...	...	...	0.889 0.713 0.655	1.081 0.904 1.098	1.003 0.700 0.908
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	1.58 1.45 1.62	1.87 1.85 1.94	2.00 1.79 2.03
Points—	...	...	...	...	...
For weight of Milk (lbs.)	...	...	...	...	...	49.40	58.60	63.50
For weight of Fat (lbs. × 20)	...	...	...	...	...	44.54	61.66	53.42
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	18.20	22.04	23.28
Total Points for Milk	...	...	...	...	...	112.14	142.90	140.20
Deductions ...	...	...	...	...	...	—	—	—
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	112.14	142.90	140.20
Points for time since Calving	...	...	...	...	...	—	—	—
TOTAL POINTS GAINED	...	...	...	...	...	112.14	142.90	140.20
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	70.84	108.59	97.97
Points for time since Calving	...	...	...	...	...	—	—	—
Total Points per 1,000 lbs. live weight	...	...	...	...	...	70.84	108.59	97.97
Remarks and Awards	...	...	...	...	...	3rd Prize.	1st Prize.	2nd Prize.

CLASS 15.—RED POLL COW, ENTERED IN OR ACCEPTED FOR THE HERD BOOK. BORN ON OR PREVIOUS TO 1ST AUGUST, 1933. COWS ENTERED IN THIS CLASS MUST HAVE YIELDED A MINIMUM OF 8,000 LBS. AT FIVE YEARS OLD OR OVER, OR 6,000 LBS. AT UNDER FIVE YEARS OLD EITHER DURING A LACTATION PERIOD OF 45 WEEKS, OR FOR ANY ONE COMPLETED YEAR OF A RECOGNISED MILK RECORDING SOCIETY.

Number Name ...	...	...	...	...	...	107 Wissett Nonsuch.	108 Diss Mernahl.	110 Kilton Fantasy.	111 White Hill Camy Blossom.
Born ...	...	...	...	...	...	June 16, 1928, 1,322 Sept. 8, 17	Feb. 22, 1932, 1,332 Aug. 19, 37	Aug. 15, 1932, 1,288 April 3, 175	July 13, 1933, 1,180 May 8, 140
Live weight, in lbs. ...	...	...	...	...	...	Even. 17.5 Morn. 17.5 Aft. 17.1	Even. 18.9 Morn. 19.3 Aft. 19.6	Even. 17.2 Morn. 17.5 Aft. 18.8	Even. 17.2 Morn. 16.2 Aft. 17.8
Last Calved ...	...	...	...	...	...	4.62 5.25 4.50	2.78 2.65 3.28	4.54 4.86 4.68	4.17 3.80 4.21
Days since Calving ...	...	...	...	...	...	9.48 9.33 9.58	9.42 9.21 9.22	9.40 8.96 9.34	9.17 9.10 8.69
Weight of Milk	...	...	...	...	...	14.10 14.58 14.08	11.96 11.86 12.50	13.94 13.82 14.02	13.34 12.96 12.90
Percentage { Fat Composition of { Solids other than Fat the Milk { Total Solids	...	...	...	...	...	0.809 0.919 0.770	0.625 0.511 0.643	0.781 0.851 0.880	0.717 0.616 0.749
Actual weight of Fat, in lbs. ...	...	...	...	...	...	1.66 1.63 1.64	1.72 1.78 1.81	1.62 1.57 1.76	1.58 1.48 1.55
Actual weight of Solids other than Fat, in lbs. ...	...	...	...	...	...	52.10	57.80	53.50	51.20
Points—	...	...	...	...	...	For weight of Milk (lbs.)	33.58	50.24	41.64
For weight of Fat (lbs. × 20) ...	...	...	...	...	...	19.72	21.24	19.80	18.44
For weight of Solids other than Fat (lbs. × 4) ...	...	...	...	...	...	121.78	112.62	123.54	111.28
Total Points for Milk	...	...	...	...	...	—	20.00	—	—
Deductions ...	...	...	...	...	...	121.78	92.62	123.54	111.28
TOTAL POINTS GAINED FOR MILK ...	...	...	...	...	...	—	—	12.00	10.00
Points for time since Calving	...	...	...	...	...	121.78	92.62	135.54	121.28
TOTAL POINTS GAINED	...	...	...	...	...	92.12	69.53	95.92	93.59
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	—	—	12.00	10.00
Points for time since Calving	...	...	...	...	...	92.12	69.53	107.92	103.59
Total Points per 1,000 lbs. live weight	...	...	...	...	...	5th Prize.	3rd Prize.	6th Prize.	
Remarks and Awards	...	...	...	...	...

CLASS 15.—RED POLL COW (BORN ON OR PREVIOUS TO 1ST AUGUST, 1933)—*Continued.*

Number Name	...	...	...	...	...	112 White Hill Arrogant Liby.	113 Knapp Prudence 21st.	114 Knapp Prudence 38th.	115 Cinder Queen Rita.
Born ...	...	...	...	...	...	June 24, 1932. 1406	July 7, 1933. 1183	Oct. 1, 1932. 1327	Nov. 6, 1932. 1476
Live weight, in lbs. ...	...	...	...	...	...	Aug. 30. 26	Aug. 3. 53	Aug. 1. 55	Aug. 8. 48
Last Calving ...	...	...	...	...	...	...	...	...	...
Days since Calving	...	...	...	...	...	...	...	...	...
Weight of Milk	...	...	...	...	...	Even. 21-6 Morn. 20-2 Aft. 19-4	Even. 16-5 Morn. 16-3 Aft. 16-1	Even. 21-2 Morn. 15-6 Aft. 18-3	Even. 17-5 Morn. 14-7 Aft. 17-1
Percentage { Fat	...	...	...	...	...	4-48	4-23	4-22	3-50
Composition of { Solids other than Fat	...	...	...	...	...	9-38	9-33	9-03	9-30
the Milk { Total Solids	...	...	...	...	...	13-86	13-56	13-28	12-98
Actual weight of Fat, in lbs. ...	...	...	...	...	...	0-468	0-698	0-895	0-628
Actual weight of Solids other than Fat, in lbs. ...	...	...	...	...	...	2-03	1-54	1-92	1-64
Points—	...	...	...	...	...	1-78	1-45	1-41	1-34
For weight of Milk (lbs.)	...	...	...	...	...	61-20	48-90	55-10	49-30
For weight of Fat (lbs. × 20)	...	...	...	...	...	55-40	39-40	41-48	38-52
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	22-40	17-92	19-92	18-24
Total Points for Milk ...	...	...	...	...	...	138-60	106-22	116-50	106-03
Deductions ...	...	...	...	...	...	—	—	—	—
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	138-60	106-22	116-50	106-03
Points for time since Calving	...	...	...	...	...	—	1-30	1-50	0-80
TOTAL POINTS GAINED	...	...	...	...	...	138-60	107-52	118-00	103-86
Points gained for Milk per 1,000 lbs. live weight ...	...	...	...	...	...	130-02	89-79	87-79	98-57
Points for time since Calving	...	...	...	...	...	—	1-30	1-50	0-80
Total Points per 1,000 lbs. live weight	...	...	...	...	...	130-02	91-09	89-29	99-37
Remarks and Awards	...	...	...	...	...	2nd Prize.	Highly Commended.	Highly Commended.	Highly Commended.

CLASS 17.—RED POLL HEIFER, ENTERED IN OR ELIGIBLE FOR THE HERD BOOK. BORN ON OR AFTER 1ST AUGUST, 1935, AND HAVING PRODUCED ONLY ONE CALF.

Number Name	...	...	...	...	...	123 Wissett Pantail.		124 Kirtou Selector.		127 Comblwell Mince 2nd.		128 Mistley Amy.	
						Even.	Morn.	Even.	Morn.	Even.	Morn.	Even.	Morn.
Born ...	...	...	...	...	...	10-1	10-0	10-4	10-3	8-7	7-9	14-0	14-2
Live weight, in lbs. ...	...	...	...	...	...	4-87	4-21	4-80	4-12	4-57	4-20	3-61	3-27
Last Calved ...	...	...	...	...	...	8-05	9-55	9-22	9-22	9-27	9-24	9-36	9-21
Days since Calving ...	...	...	...	...	...	13-82	13-76	14-12	13-58	13-84	13-44	13-00	12-48
Weight of Milk ...	...	...	...	...	...	0-402	0-421	0-490	0-424	0-398	0-332	0-510	0-464
Percentage { Fat ...	...	...	...	...	...	0-90	0-96	0-97	0-97	0-81	0-73	1-31	1-31
Composition of { Solids other than Fat ...	...	...	...	...	...	30-20	30-20	31-30	31-30	25-10	25-10	41-80	41-80
the Milk { Total Solids ...	...	...	...	...	...	27-26	27-26	28-84	28-84	21-06	21-06	31-36	31-36
Actual weight of Fat, in lbs. ...	...	...	...	...	...	11-36	11-36	11-68	11-68	9-44	9-44	15-68	15-68
Actual weight of Solids other than Fat, in lbs. ...	...	...	...	...	...	68-82	68-82	71-82	71-82	55-60	55-60	88-84	88-84
Points ...	...	...	...	...	...	...	...	...	...	...	...	...	...
For weight of Milk (lbs.) ...	...	...	...	...	...	...	...	...	...	...	...	...	...
For weight of Fat (lbs. × 20) ...	...	...	...	...	...	...	...	...	...	...	...	...	...
For weight of Solids other than Fat (lbs. × 4) ...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Points for Milk ...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deductions ...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL POINTS GAINED FOR MILK ...	...	...	...	...	...	68-82	68-82	71-82	71-82	55-60	55-60	88-84	88-84
Points for time since Calving ...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL POINTS GAINED ...	...	...	...	...	...	68-82	68-82	80-72	80-72	55-70	55-70	93-84	93-84
Points gained for Milk per 1,000 lbs. live weight... ..	...	...	...	...	...	64-08	64-08	60-06	60-06	41-34	41-34	79-04	79-04
Points for time since Calving ...	...	...	...	...	...	...	...	8-90	8-90	0-10	0-10	5-00	5-00
Total Points per 1,000 lbs. live weight ...	...	...	...	...	...	64-08	64-08	77-96	77-96	41-44	41-44	84-04	84-04
Remarks and Awards ...	...	...	...	...	...	3rd Prize.	3rd Prize.	2nd Prize.	2nd Prize.	...	...	1st Prize.	1st Prize.

CLASS 19.—AYRSHIRE COW, REGISTERED WITH A NUMBER IN THE HERD BOOK OR APPENDICES. BORN ON OR PREVIOUS TO 1ST AUGUST, 1938. COWS ENTERED IN THIS CLASS MUST HAVE YIELDED A MINIMUM OF 8,000 LBS. AT FIVE YEARS OR OVER, OR 6,000 LBS. AT UNDER FIVE YEARS OLD EITHER DURING A LACTATION PERIOD OF 45 WEEKS, OR FOR ANY ONE COMPLETED YEAR OF A RECOGNISED MILK RECORDING SOCIETY.

Number Name ...	...	...	...	...	...	...	...	129 Lesserlun Mayfair 3rd.	130 Broomlands Bloom.	131 Anchengbort Eua.	132 Rottenrow Killy.
Born ...	...	...	...	...	...	...	...	Mar. 17, 1930. 1,069	Aug. 24, 1930. 1,235	April 3, 1933. 1,134	Mar. 27, 1932. 1,084
Live weight, in lbs. ...	...	...	...	...	...	...	...	Aug. 29, 27	Sept. 10, 15	Sept. 11, 14	Sept. 7, 18
Last Calved ...	...	...	...	...	...	...	...	...	...	...	...
Days since Calving ...	...	...	...	...	...	...	...	...	...	...	...
Weight of Milk	...	...	...	...	...	...	Even. 17.1 Morn. 14.1 Aft. 14.1	Even. 28.9 Morn. 27.4 Aft. 28.0	Even. 17.7 Morn. 18.7 Aft. 19.1	Even. 23.0 Morn. 20.9 Aft. 21.3	
Percentage (Fat	...	...	...	...	...	...	4.35	3.60	3.93	3.41	3.45
Composition of { Solids other than Fat	...	...	...	...	...	...	9.43	9.28	9.35	8.79	8.77
the Milk { Total Solids	...	...	...	...	...	...	13.78	12.88	13.28	12.29	12.22
Actual weight of Fat, in lbs.	...	...	...	...	...	...	0.744	0.508	0.554	0.934	0.966
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	...	1.61	1.31	1.32	2.46	2.46
Points—	...	...	...	...	...	...	...	...	...	...	...
For weight of Milk (lbs.)	...	...	...	...	...	...	45.30	84.30	55.50	55.50	68.20
For weight of Fat (lbs. × 20)	...	...	...	...	...	...	36.12	59.04	48.76	48.76	55.74
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	...	16.96	30.12	20.24	20.24	25.08
Total Points for Milk	...	...	...	...	...	...	98.38	173.46	124.50	124.50	149.02
Deductions ...	...	...	...	...	...	...	...	...	...	...	...
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	...	98.38	173.46	124.50	124.50	149.02
Points for time since Calving	...	...	...	...	...	...	...	...	...	...	...
TOTAL POINTS GAINED	...	...	...	...	...	...	98.38	173.46	124.50	124.50	149.02
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	...	89.52	140.45	107.89	107.89	137.47
Points for time since Calving	...	...	...	...	...	...	...	...	...	...	...
Total Points per 1,000 lbs. live weight	...	...	...	...	...	...	89.52	140.45	107.89	107.89	137.47
Remarks and Awards	...	...	...	...	...	...	...	1st Prize.	...	6th Prize.	3rd Prize.

CLASS 19.—AYRSHIRE COW (BORN ON OR PREVIOUS TO 1ST AUGUST, 1933)—Continued.

Number Name	133 Elmhurst Khiva.	134 Kilcudzow Favourite.	137 Ickham Carol 6th.	140 Hill Duchess 10th.
Born ...	Jan. 1, 1932. 1,162	Oct. 17, 1927. 1,322	June 2, 1932. 1,203	Mar. 1, 1933. 1,129
Live weight, in lbs. ...	Sept. 13. 12	Sept. 4. 21	Sept. 6. 19	Sept. 8. 17
Last Calved ...				
Days since Calving ...				
Weight of Milk	Even. 14.2 Morn. 14.1 Aft. 13.7	Even. 20.5 Morn. 20.3 Aft. 18.5	Even. 10.1 Morn. 15.0 Aft. 17.7	Even. 20.9 Morn. 21.7 Aft. 22.2
Percentage { Composition of Solids other than Fat the Milk { Total Solids	0.67 9.07 10.34 13.68 15.34	3.42 8.62 12.04 13.32 12.70	5.24 8.88 14.12 13.70 14.24	3.93 9.39 13.32 14.04 13.56
Actual weight of Fat, in lbs. ...	0.947 0.830 0.832	0.701 0.812 0.831	0.844 0.749 0.989	0.821 0.983 0.939
Actual weight of Solids other than Fat, in lbs. ...	1.37 1.38 1.27	1.77 1.89 1.52	1.43 1.39 1.53	1.96 2.06 2.07
Points—				
For weight of Milk (lbs.) ...	42.00	50.30	40.40	64.80
For weight of Fat (lbs. × 20) ...	52.18	46.88	51.64	54.86
For weight of Solids other than Fat (lbs. × 4) ...	16.08	20.72	17.40	24.36
Total Points for Milk ...	110.26	126.90	118.44	144.02
Deductions ...	—	10.00	—	—
TOTAL POINTS GAINED FOR MILK ...	110.26	116.90	118.44	144.02
Points for time since Calving ...	—	—	—	—
TOTAL POINTS GAINED	110.26	116.90	118.44	144.02
Points gained for MILK per 1,000 lbs. live weight...	94.80	88.43	98.45	127.56
Points for time since Calving ...	—	—	—	—
Total Points per 1,000 lbs. live weight	94.80	88.43	98.45	127.56
Remarks and Awards		Reserve.	7th Prize.	4th Prize.

CLASS 19.—AYRSHIRE COW (BORN ON OR PREVIOUS TO 1ST AUGUST, 1933)—Continued.

Number Name ...	...	...	...	...	...	141 Draffan Patricia 2nd. Aug. 1, 1931. 1,204 Aug. 5, 51	142 Overflow Tote.			145 Brooks Snowdrop. Oct. 8, 1932. 1,049 Sept. 8, 17
							Even.	Morn.	Aft.	
Born ...	...	...	...	...	...	Even.	Even.	Morn.	Aft.	
Live weight, in lbs. ...	...	...	...	...	...	18.0	20.7	20.9	21.3	
Last Calved ...	...	...	...	...	...	4.75	5.18	5.64	5.19	
Days since Calving ...	...	...	...	...	...	8.59	9.34	9.22	8.97	
Weight of Milk	...	...	...	...	...	13.34	14.52	14.86	14.16	
Percentage (Fat	...	...	...	...	...	0.855	1.072	1.179	1.105	
Composition of Solids other than Fat	...	...	...	...	...	1.55	1.93	1.93	1.91	
the Milk { Total Solids	...	...	...	...	...
Actual weight of Fat, in lbs.	...	...	...	...	...
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...
Points ...	...	...	...	...	...
For weight of Milk (lbs.)	...	...	...	...	...	59.70	62.90	62.90	62.90	
For weight of Fat (lbs. × 20)	...	...	...	...	...	48.42	67.12	67.12	67.12	
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	20.48	23.08	23.08	23.08	
Total Points for Milk	...	...	...	...	...	128.60	153.10	153.10	153.10	
Deductions ...	...	...	...	...	...	—	—	—	—
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	128.60	153.10	153.10	153.10	
Points for time since Calving	...	...	...	...	...	1.10	—	—	—	
TOTAL POINTS GAINED	...	...	...	...	...	129.70	153.10	153.10	153.10	
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	106.81	118.13	118.13	118.13	
Points for time since Calving ...	...	...	...	...	...	1.10	—	—	—	
Total Points per 1,000 lbs. live weight	...	...	...	...	...	107.91	118.13	118.13	118.13	
Remarks and Awards	...	...	...	...	...	5th Prize.	2nd Prize.			

CLASS 20.—AYRSHIRE COW, REGISTERED WITH A NUMBER IN THE HERD BOOK OR APPENDICES. BORN AFTER 1ST AUGUST, 1933, AND PREVIOUS TO 1ST AUGUST, 1935.

Number Name	148	149	150	152
								Barlough Lillas 28th. Dec. 14, 1933. 1,272 Sept. 11, 14	Kilmaurs Mauns Mermald 2nd. Sept. 8, 1934. 1,075 Sept. 8, 17	Kilmaurs Mauns Ruth 3rd. Dec. 2, 1934. 1,120 Sept. 2, 23	Sheepcotes Relish. Sept. 14, 1934. 1,183 Sept. 15, 10
Even.	Morn.	Aft.	Even.	Morn.	Aft.	Even.	Morn.	Aft.	Even.	Morn.	Aft.
23.6	23.7	25.5	20.0	19.9	19.4	20.2	21.4	22.4	20.0	23.9	23.6
5.01	4.24	5.12	4.24	5.02	4.86	3.80	3.48	3.60	4.30	4.19	4.82
9.49	9.34	9.08	9.26	9.44	9.18	8.51	8.56	8.58	9.27	9.55	9.40
14.50	13.58	14.20	13.50	14.46	14.04	12.40	12.04	12.18	13.56	13.74	14.22
1.182	1.005	1.306	0.848	0.999	0.943	0.786	0.745	0.806	1.115	1.001	1.138
2.24	2.21	2.32	1.85	1.88	1.78	1.72	1.83	1.92	2.41	2.08	2.22
72.80	69.86	69.86	50.30	55.80	55.80	64.00	64.00	64.00	73.50	65.08	65.08
27.08	27.08	27.08	22.04	22.04	22.04	21.88	21.88	21.88	27.04	27.04	27.04
169.74	169.74	169.74	137.14	137.14	137.14	132.62	132.62	132.62	166.22	166.22	166.22
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CLASS 20.—AYRSHIRE COW (BORN AFTER 1ST AUGUST, 1933, AND PREVIOUS TO 1ST AUGUST, 1935)—Continued.

Number Name</
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CLASS 21.—AYRSHIRE HEIFER, REGISTERED WITH A NUMBER IN THE HERD BOOK OR APPENDICES. BORN ON OR AFTER 1ST AUGUST, 1935, AND HAVING PRODUCED ONLY ONE CALF.

Number Name ...	158 Netherwood Diane.	159 Gibson's Angela 6th.	160 Isles Wendy.	161 Nether Craig Marina.
	Dec. 23, 1935. 655 Sept. 7, 18	Oct. 17, 1935. 1,074 Aug. 7, 49	Dec. 11, 1935. 961 Aug. 11, 45	Nov. 7, 1935. 1,023 Sept. 12, 13
Born ...	Even. Morn. Aft.	Even. Morn. Aft.	Even. Morn. Aft.	Even. Morn. Aft.
Live weight, in lbs. ...	15.8 16.0 16.4	20.2 20.6 21.8	15.3 15.5 15.5	18.1 20.6 19.1
Last Calved ...	3.55 4.45 4.56	3.21 3.40 3.05	3.61 4.20 3.77	3.23 5.76 5.22
Days since Calving ...	9.25 9.31 9.06	8.63 9.10 8.50	8.87 8.61 8.91	9.50 9.48 9.20
Weight of Milk	12.80 13.76 13.62	11.84 12.50 11.55	12.48 12.90 12.68	13.42 15.24 14.42
Percentage Fat	0.561 0.712 0.748	0.648 0.700 0.663	0.552 0.665 0.584	0.710 1.187 0.907
Composition of Solids other than Fat	1.46 1.49 1.49	1.74 1.87 1.83	1.36 1.33 1.38	1.72 1.95 1.76
the Milk	48.20	62.60	46.30	57.80
Actual weight of Fat, in lbs.	40.42	40.26	36.02	57.88
Points—	17.76	21.84	16.28	21.72
For weight of Milk (lbs.)	106.38	134.70	98.60	137.40
For weight of Fat (lbs. × 20)	106.38	134.70	98.60	137.40
For weight of Solids other than Fat (lbs. × 4)	—	0.90	0.50	—
Total Points for Milk	106.38	125.60	99.10	137.40
Deductions ...	111.39	116.11	102.60	134.31
TOTAL POINTS GAINED FOR MILK	—	0.90	0.50	—
Points for time since Calving	106.38	117.01	103.10	134.31
TOTAL POINTS GAINED	111.39	117.01	103.10	134.31
Points gained for Milk per 1,000 lbs. live weight...	111.39	117.01	103.10	134.31
Points for time since Calving	111.39	117.01	103.10	134.31
Total Points per 1,000 lbs. live weight	111.39	117.01	103.10	134.31
Remarks and Awards	6th Prize.	4th Prize.	Highly Commended.	1st Prize.

CLASS 21.—AYRSHIRE HEIFER (BORN ON OR AFTER 1ST AUGUST, 1935)—Continued.

Number Name	...	...	...	...	...	...	162 Whitehill Miss Donald.	163 Carnell Ann 3rd.			166 Sheepcotes Lady Love.			167 Beauchamps Bun.		
Born ...	...	...	...	...	...	...	Sept. 18, 1935. 1,072 Sept. 1. 24	Even.	Morn.	Aft.	Dec. 7, 1935. 1,105 Aug. 26. 30	Even.	Morn.	Aft.	Nov. 8, 1935. 1,018 June 8. 109	
Live weight, in lbs.	...	...	...	...	...	...	15.3	16.2	14.5	...	19.5	18.7	19.1	18.1	15.4	17.1
Last Calved ...	...	...	...	...	...	...	3.29	3.69	2.92	...	5.27	4.48	4.26	4.72	4.87	5.12
Days since Calving	...	...	...	...	...	...	9.55	8.67	9.00	...	8.67	9.38	9.36	8.80	9.05	8.90
Weight of Milk	...	...	...	...	...	...	12.84	12.36	11.92	...	13.72	13.18	13.62	13.52	13.02	14.02
Percentage { Fat	...	...	...	...	...	...	0.503	0.508	0.423	...	0.959	0.739	0.703	0.854	0.750	0.876
Composition of { Solids other than Fat	...	...	...	...	...	...	1.46	1.40	1.31	...	1.84	1.78	1.81	1.59	1.39	1.52
the Milk { Total Solids	...	...	...	...	...	...	40.00	30.48	30.48	...	58.80	48.02	48.02	50.60	49.60	49.60
Actual weight of Fat, in lbs.	...	...	...	...	...	...	16.68	16.68	16.68	...	21.72	20.92	20.92	18.00	18.00	18.00
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	...	93.16	10.00	10.00	...	128.54	131.82	131.82	118.20	118.20	118.20
Points—	...	...	...	...	...	...	83.16	83.16	83.16	...	128.54	131.82	131.82	118.20	118.20	118.20
For weight of Milk (lbs.)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
For weight of Fat (lbs. × 20)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Points for Milk...	...	...	...	...	...	...	93.16	10.00	10.00	...	128.54	131.82	131.82	118.20	118.20	118.20
Deductions ...	...	...	...	...	...	...	83.16	83.16	83.16	...	128.54	131.82	131.82	118.20	118.20	118.20
TOTAL POINTS GAINED FOR MILK ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Points for time since Calving	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL POINTS GAINED	...	...	...	...	...	...	83.16	83.16	83.16	...	128.54	131.82	131.82	125.10	125.10	125.10
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	...	77.57	77.57	77.57	...	116.33	127.73	127.73	116.11	116.11	116.11
Points for time since Calving	...	...	...	...	...	...	...	...	...	...	...	...	...	6.90	6.90	6.90
Total Points per 1,000 lbs. live weight	...	...	...	...	...	...	77.57	77.57	77.57	...	116.33	127.73	127.73	123.01	123.01	123.01
Remarks and Awards	...	...	...	...	...	...	Highly Commended.	...	...	...	3rd Prize.	2nd Prize.	...	5th Prize.	...	...

CLASS 21.—AYRSHIRE HEIFER (BORN ON OR AFTER 1ST AUGUST, 1935)—Continued.

Number Name ...	...	...	...	...	...	169 Minstead Bracelet.	172 Bargower Lady Mand.
Born ...	...	...	...	...	...	Oct. 8, 1936. 967	Oct. 3, 1935. 1,154
Live weight, in lbs. ...	...	...	...	...	...	Sept. 11. 14	Sept. 14. 11
Last Calved ...	...	...	...	...	...
Days since Calving ...	...	...	...	...	...
Weight of Milk	...	...	...	...	...	Even. Morn. Aft.	Even. Morn. Aft.
Percentage { Fat	...	...	...	...	...	14.8 14.0 14.0	11.8 11.4 12.2
Composition of { Solids other than Fat	...	...	...	...	...	4.13 5.27 5.10	5.50 5.85 5.51
the Milk { Total Solids	...	...	...	...	...	8.93 8.91 8.90	9.94 9.75 9.53
Actual weight of Fat, in lbs. ...	...	...	...	...	...	13.06 14.18 14.00	15.44 15.60 15.04
Actual weight of Solids other than Fat, in lbs. ...	...	...	...	...	...	0.611 0.738 0.714	0.649 0.697 0.672
Points—	...	...	...	...	...	1.32 1.25 1.25	1.17 1.11 1.16
For weight of Milk (lbs.)	...	...	...	...	...	42.80	35.40
For weight of Fat (lbs. × 20)	...	...	...	...	...	41.26	39.76
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	15.28	13.76
Total Points for Milk	...	...	...	...	...	99.34	88.92
Deductions ...	...	...	...	...	...	—	—
TOTAL POINTS GAINED FOR MILK ...	...	...	...	...	...	99.34	88.92
Points for time since Calving	...	...	...	...	...	—	—
TOTAL POINTS GAINED	...	...	...	...	...	99.34	88.92
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	102.73	77.05
Points for time since Calving	...	...	...	...	...	—	—
Total Points per 1,000 lbs. live weight	...	...	...	...	...	102.73	77.05
Remarks and Awards	...	...	...	...	...	Reserve.	Highly Commended.

CLASS 22.—GUERNSEY COW, ENTERED IN OR ACCEPTED FOR THE HERD BOOK. BORN ON OR PREVIOUS TO 1ST AUGUST, 1933. COWS ENTERED IN THIS CLASS MUST HAVE YIELDED A MINIMUM OF 8,000 LBS. AT FIVE YEARS OLD OR OVER, OR 6,000 LBS. AT UNDER FIVE YEARS OLD EITHER DURING A LACTATION PERIOD OF 45 WEEKS, OR FOR ANY ONE COMPLETED YEAR OF A RECOGNISED MILK RECORDING SOCIETY.

Number	Name	173 Bella's Cora, 4th of Les Jetties.	174 Rosina 3rd of Sausmarez Manor.	175 Roscy of Goodnestone 64th.	176 Lassie Darling of Mapleton.
Born	Mar. 25, 1932. 1,070	April 6, 1932. 1,039	Sept. 16, 1932. 1,116	June 28, 1932. 852
Live weight, in lbs.	Sept. 8, 17	May 11, 137	Sept. 9, 16	Aug. 23, 33
Last Calved	Even.	Even.	Even.	Even.
Days since Calving	Morn. 23.5	Morn. 15.1	Morn. 19.1	Morn. 19.0
Weight of Milk	Aft. 23.3	Aft. 15.9	Aft. 17.9	Aft. 20.0
Percentage (Fat	6.58	7.26	6.40	4.15
Composition of { Solids other than Fat	8.92	9.36	9.67	8.81
the Milk { Total Solids	15.90	16.82	15.98	12.60
Actual weight of Fat, in lbs.	1.546	1.096	1.136	0.789
Actual weight of Solids other than Fat, in lbs.	2.10	1.44	1.74	1.07
Points—	2.07	1.39	1.69	1.64
For weight of Milk (lbs.)	70.10	42.20	55.00	58.30
For weight of Fat (lbs. × 20)	89.08	56.54	70.36	48.50
For weight of Solids other than Fat (lbs. × 4)	24.96	15.44	21.24	19.92
Total Points for Milk	184.14	114.18	140.60	126.72
Deductions	—	—	—	10.00
TOTAL POINTS GAINED FOR MILK	184.14	114.18	140.60	116.72
Points for time since Calving	—	9.70	—	—
TOTAL POINTS GAINED	184.14	123.88	146.60	116.72
Points gained for Milk per 1,000 lbs. live weight...	172.09	109.89	131.36	137.00
Points for time since Calving	—	9.70	—	—
Total Points per 1,000 lbs. live weight	172.09	119.59	131.36	137.00
Remarks and Awards	1st Prize.	4th Prize.	2nd Prize.	5th Prize.

CLASS 22.—GUERNSEY COW (BORN ON OR PREVIOUS TO 1ST AUGUST, 1938)—Continued.

Number Name	...	...	...	...	...	...	...	177 Leweston La Belle 3rd.	179 Columbine of Ivy Gates.
Born	...	...	...	...	...	...	...	Jan. 12, 1933. 1,170	Sept. 29, 1931. 1,094
Live weight, in lbs.	...	...	...	...	...	...	...	Aug. 19. 37	Aug. 14. 42
Last Calved	...	...	...	...	...	...	...
Days since Calving	...	...	...	...	...	...	...
Weight of Milk	...	...	...	...	...	...	...	Even. Morn. Aft. 10.6 19.2 19.7	Even. Morn. Aft. 10.8 16.1 14.7
Percentage of Fat	...	...	...	...	...	...	...	5.29 6.40 5.07	4.39 4.43 4.50
Composition of Solids other than Fat	...	...	...	...	...	...	...	8.91 9.26 8.77	9.37 8.71 9.18
the Milk Total Solids	...	...	...	...	...	...	...	14.20 15.66 13.84	13.76 13.14 13.68
Actual weight of Fat, in lbs.	...	...	...	...	...	...	...	1.037 1.229 0.999	0.738 0.713 0.662
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	...	...	1.75 1.78 1.73	1.57 1.40 1.35
Points—	...	...	...	...	...	...	...
For weight of Milk (lbs.)	...	...	...	...	...	...	...	58.50	47.60
For weight of Fat (lbs. × 20)	...	...	...	...	...	...	...	65.80	42.26
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	...	...	21.04	17.28
Total Points for Milk	...	...	...	...	...	...	...	144.84	107.14
Deductions	...	...	...	...	...	...	...	—	—
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	...	...	144.84	107.14
Points for time since Calving	...	...	...	...	...	...	...	—	0.20
TOTAL POINTS GAINED	...	...	...	...	...	...	...	144.84	107.34
Points gained for Milk per 1,000 lbs. live weight	...	...	...	...	...	...	...	122.85	97.93
Points for time since Calving	...	...	...	...	...	...	...	—	0.20
Total Points per 1,000 lbs. live weight	...	...	...	...	...	...	...	122.85	98.13
Remarks and Awards	...	...	...	...	...	...	...	3rd Prize.	Reserve.

CLASS 23.—GURNSEY COW, ENTERED IN OR ACCEPTED FOR THE HERD BOOK. BORN AFTER 1ST AUGUST, 1933, AND WHICH HAS PRODUCED TWO OR MORE CALVES.

Number Name	...	...	...	...	...	...	...	...	...	181 Chick's Primrose.	182 Hobnabury Ivy 3rd.	183 Way's Primula.	184 Mapleton Mermaid 5th.
Born	...	...	...	...	...	...	...	...	...	April 21, 1934, 1917	Feb. 15, 1935, 891	Feb. 7, 1935, 1923	June 23, 1934, 1971
Live weight, in lbs.	...	...	...	...	...	...	...	...	...	Aug. 24, 32	May 15, 133	July 30, 57	July 1, 86
Last Calved	...	...	...	...	...	...	...	...	...
Days since Calving	...	...	...	...	...	...	...	...	...
Weight of Milk	...	...	...	...	...	...	...	...	...	Even. 15-0 Morn. 16-7 Aft. 16-7	Even. 10-7 Morn. 16-9 Aft. 11-2	Even. 17-9 Morn. 17-5 Aft. 17-5	Even. 12-5 Morn. 13-0 Aft. 13-0
Percentage { Fat	...	...	...	...	...	...	...	...	...	4-73 4-90 4-24	4-50 7-57 4-70	3-91 4-26 3-60	4-05 3-93 4-16
Composition of { Solids other than Fat	...	...	...	...	...	...	...	...	...	9-55 9-26 9-28	9-58 8-83 8-72	9-07 8-98 8-52	8-79 8-69 8-76
the Milk { Total Solids	...	...	...	...	...	...	...	...	...	14-28 14-16 13-52	14-08 16-40 13-42	12-98 13-24 12-12	12-84 12-02 12-92
Actual weight of Fat, in lbs.	...	...	...	...	...	...	...	...	...	0-710 0-818 0-708	0-482 1-279 0-526	0-700 0-746 0-630	0-506 0-511 0-541
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	...	...	...	...	1-45 1-55 1-55	1-03 1-49 0-98	1-62 1-57 1-49	1-10 1-13 1-14
Points—	...	...	...	...	...	...	...	...	...
For weight of Milk (lbs.)	...	...	...	...	...	...	...	...	...	48-40	38-80	52-90	38-50
For weight of Fat (lbs. $\times 20$)	...	...	...	...	...	...	...	...	...	44-72	45-74	41-52	31-16
For weight of Solids other than Fat (lbs. $\times 4$)	...	...	...	...	...	...	...	...	...	18-12	14-00	18-72	13-48
Total Points for Milk	...	...	...	...	...	...	...	...	...	111-24	98-54	113-14	83-14
Deductions	...	...	...	...	...	...	...	...	...	—	—	—	—
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	...	...	...	...	111-24	98-54	113-14	83-14
Points for time since Calving	...	...	...	...	...	...	...	...	...	—	9-30	1-70	4-60
TOTAL POINTS GAINED	...	...	...	...	...	...	...	...	...	111-24	107-84	114-84	87-74
Points gained for Milk per 1,000 lbs. live weight.	...	...	...	...	...	...	...	...	...	109-38	110-59	100-75	71-00
Points for time since Calving	...	...	...	...	...	...	...	...	...	—	9-30	1-70	4-60
Total Points per 1,000 lbs. live weight	...	...	...	...	...	...	...	...	...	109-38	110-89	102-45	75-60
Remarks and Awards	...	...	...	...	...	...	...	...	...	3rd Prize.	4th Prize.	2nd Prize.	Highly Commended.

CLASS 23.—GUERNSEY COW (BORN AFTER 1ST AUGUST, 1933)—Continued.

Number Name	185 Moss Gay 6th of Mapleton.	186 Primrose 3rd of La Croix.	187 Floss of Payhay.	188 Rex's Primrose of Avisford 3rd.
Born	Aug. 6, 1934. 906	Feb. 1, 1934. 985	Aug. 2, 1934. 979	April 5, 1935. 1,092
Live weight, in lbs.	June 16, 101	July 9, 78	July 12, 75	July 23, 64
Last Calved				
Days since Calving				
Weight of Milk	Even. 12.9 Morn. 14.7 Aft. 14.1	Even. 17.5 Morn. 17.5 Aft. 18.1	Even. 15.6 Morn. 15.7 Aft. 16.7	Even. 14.1 Morn. 13.9 Aft. 14.4
Percentage (Fat	4.33 4.35 4.80	4.75 3.37 3.78	3.24 3.12 4.16	4.66 5.22 6.19
Composition of Solids other than Fat	9.17 8.65 9.16	8.83 8.83 8.56	9.08 8.52 8.76	9.36 8.68 8.61
the Milk (Total Solids	13.50 13.00 13.96	13.58 12.20 12.34	12.32 11.64 12.92	14.02 13.90 14.80
Actual weight of Fat, in lbs.	0.459 0.639 0.677	0.831 0.590 0.684	0.505 0.490 0.605	0.657 0.726 0.891
Actual weight of Solids other than Fat, in lbs.	1.18 1.27 1.29	1.55 1.55 1.55	1.42 1.34 1.46	1.32 1.21 1.24
Points—				
For weight of Milk (lbs.)	41.70	53.10	48.00	42.40
For weight of Fat (lbs. $\times 20$)	37.50	42.10	33.80	45.48
For weight of Solids other than Fat (lbs. $\times 4$)	14.96	18.60	16.88	15.08
Total Points for Milk	94.16	113.80	98.68	102.96
Deductions	—	—	—	—
TOTAL POINTS GAINED FOR MILK	94.16	113.80	98.68	102.96
Points for time since Calving	6.10	3.80	3.50	2.40
TOTAL POINTS GAINED	100.26	117.60	102.18	105.36
Points gained for Milk per 1,000 lbs. live weight... ..	103.93	115.53	100.80	94.29
Points for time since Calving	6.10	3.80	3.50	2.40
Total Points per 1,000 lbs. live weight	110.03	119.33	104.30	96.69
Remarks and Awards	Highly Commended.	1st Prize.	Reserve.	5th Prize.

CLASS 24.—GUERNSEY HEIFER, ENTERED IN OR ELIGIBLE FOR THE HERD BOOK, AND WHICH HAS PRODUCED HER FIRST AND ONLY CALF AT OR UNDER THE AGE OF TWO YEARS AND NINE MONTHS.

Number Name	189 Holmby Bella's Cora.	191 Clopton Rose.	192 Leweston Wilma 3rd.	193 Esvelle Duchess 6th.
Born ...	Aug. 15, 1935. 870	June 12, 1936. 890	July 14, 1936. 1,047	Jan. 27, 1936. 899
Live weight, in lbs. ...	April 30, 148	May 4, 134	Sept. 13, 12	July 7, 80
Last Calved ...				
Days since Calving ...				
Weight of Milk	Even. 14.9 Morn. 12.7 Aft. 13.4	Even. 10.4 Morn. 11.1 Aft. 12.3	Even. 9.1 Morn. 9.8 Aft. 9.9	Even. 12.8 Morn. 13.7 Aft. 13.6
Percentage of Fat	5.60	4.11	4.25	4.28
Composition of Solids other than Fat	9.10	8.23	8.05	8.74
the Milk } Total Solids	14.70	13.34	13.20	13.02
Actual weight of Fat, in lbs.	0.834	0.427	0.476	0.548
Actual weight of Solids other than Fat, in lbs.	1.36	0.96	0.99	1.12
Points				
For weight of Milk (lbs.)	41.00	33.80	28.80	40.10
For weight of Fat (lbs. $\times 20$)	43.90	28.90	25.12	31.00
For weight of Solids other than Fat (lbs. $\times 4$)	15.12	12.16	10.76	14.28
Total Points for Milk...	100.02	74.86	64.68	85.38
Deductions ...	—	—	—	—
TOTAL POINTS GAINED FOR MILK ...	100.02	74.86	64.68	85.38
Points for time since Calving	10.80	10.40	—	4.00
TOTAL POINTS GAINED	110.82	85.26	64.68	89.38
Points gained for Milk per 1,000 lbs. live weight...	114.97	83.27	61.78	94.97
Points for time since Calving ...	10.80	10.40	—	4.00
Total Points per 1,000 lbs. live weight	125.77	93.67	61.78	98.97
Remarks and Awards	1st Prize.	Reserve.		4th Prize.

CLASS 24.—GUERNSEY HELPER—Continued.

Number Name ...	194 Cuckoofield Edth.	195 Pixie of Townhill.	197 Amber Rubina.
	Feb. 14, 1936, 921 June 21, 96	Jan. 6, 1936, 847 June 30, 87	Dec. 5, 1935, 858 July 10, 77
Born ...	Morn. 13.1 Aft. 14.4	Morn. 12.9 Aft. 15.5	Morn. 11.3 Aft. 14.4
Live weight, in lbs. ...	Even. 13.6	Even. 13.5	Even. 13.0
Last Calved ...	4.61 4.23 5.39	6.31 4.36 6.45	3.91 3.76 4.23
Days since Calving ...	9.21 8.07 9.11	9.09 9.16 8.93	8.99 8.74 8.85
Weight of Milk	13.82 13.20 14.50	15.40 13.52 15.38	12.90 12.50 13.08
Percentage { Fat ...	0.627 0.554 0.776	0.852 0.562 1.000	0.508 0.425 0.600
Composition of { Solids other than Fat ...	1.25 1.18 1.31	1.23 1.18 1.38	1.17 0.99 1.27
the Milk { Total Solids ...	41.10	41.90	38.70
Actual weight of Fat, in lbs. ...	39.14	48.28	30.84
Actual weight of Solids other than Fat, in lbs. ...	14.96	15.16	13.72
Points—	95.20	105.34	83.26
For weight of Milk (lbs.)	—	—	—
For weight of Fat (lbs. × 20) ...	95.20	105.34	83.26
For weight of Solids other than Fat (lbs. × 4)	5.60	4.70	3.70
Total Points for Milk	100.80	110.04	86.96
Deductions ...	103.37	124.37	97.04
TOTAL POINTS GAINED FOR MILK ...	5.60	4.70	3.70
Points for time since Calving	108.97	129.07	100.74
TOTAL POINTS GAINED	—	—	—
Points gained for Milk per 1,000 lbs. live weight...	—	—	—
Points for time since Calving ...	—	—	—
Total Points per 1,000 lbs. live weight	—	—	—
Remarks and Awards	3rd Prize.	2nd Prize.	5th Prize.

CLASS 25.—JERSEY COW, ENGLISH OR ISLAND BRED, ENTERED IN OR ACCEPTED FOR THE HERD BOOK. BORN ON OR PREVIOUS TO 1ST AUGUST, 1933. COWS ENTERED IN THIS CLASS MUST HAVE YIELDED A MINIMUM OF 8,000 LBS. AT FIVE YEARS OLD OR OVER, OF 6,000 LBS. AT UNDER FIVE YEARS OLD EITHER DURING A LACTATION PERIOD OF 45 WEEKS, OR FOR ANY ONE COMPLETED YEAR OF A RECOGNISED MILK RECORDING SOCIETY.

Number Name	198 Queen's Dream Lady.	199 Playmate of Oaklands.	200 La Sente's Lady Dragons.	201 Groombridge Thrip's Bella.
Born ...	Feb. 25, 1931. 439	May 17, 1929. 907	Feb. 19, 1933. 886	June 25, 1932. 866
Live weight, in lbs. ...	May 31. 117	Aug. 27. 29	July 28. 59	April 7. 171
Last Calved ...				
Days since Calving				
Weight of Milk	Even. 17.2 Morn. 13.5 Aft. 18.6	Even. 12.4 Morn. 18.0 Aft. 10.5	Even. 15.7 Morn. 12.3 Aft. 10.7	Even. 19.4 Morn. 13.0 Aft. 10.7
Percentage of Fat	4.58	2.86	5.51	4.08
Composition of Solids other than Fat	9.20	5.25	4.93	8.80
the Milk { Total Solids	13.78	9.78	9.51	8.90
Actual weight of Fat, in lbs.	0.788	12.64	0.87	8.94
Actual weight of Solids other than Fat, in lbs.	1.58	0.355	14.88	13.74
Points—	1.58	0.945	15.02	14.96
For weight of Milk (lbs.)	40.30	0.845	0.865	0.966
For weight of Fat (lbs. × 20)	50.70	1.73	1.21	1.74
For weight of Solids other than Fat (lbs. × 4)	18.04	1.49	1.58	1.48
Total Points for Milk...	118.04			
Deductions ...		46.00 42.90 17.72	44.70 46.48 17.12	
TOTAL POINTS GAINED FOR MILK ...	118.04	107.52 10.00	108.30	118.86
Points for time since Calving	7.70	97.52	108.30	118.86
TOTAL POINTS GAINED	125.74	97.52	110.20	130.86
Points gained for Milk per 1,000 lbs. live weight...	125.71	107.52	125.23	137.25
Points for time since Calving	7.70		1.90	12.00
Total Points per 1,000 lbs. live weight	133.41	107.52	124.13	149.25
Remarks and Awards	6th Prize.	Highly Commended.	Highly Commended.	5th Prize.

CLASS 25.—JERSEY COW, ENGLISH OR ISLAND BREED (BORN ON OR PREVIOUS TO 1ST AUGUST, 1933)—Continued.

Number Name	...	...	...	...	...	202 Groenridge Recorder's Inogen.		203 Morning Sky.		204 Hockley Fern.		205 Hockley Heather.	
						Even.	Aft.	Even.	Aft.	Even.	Aft.	Even.	Aft.
Born ...	...	...	...	...	...	May 17, 1933.		July 25, 1930.		July 15, 1931.		Aug. 30, 1932.	
Live weight, in lbs. ...	...	...	...	...	...	842		—		885		865	
Last Calved ...	...	...	...	...	...	Aug. 6,		June 9,		July 4,		Aug. 7,	
Days since Calving	...	...	...	...	...	50		108		83		49	
Weight of Milk	...	...	...	...	...	Even.	Aft.	Even.	Aft.	Even.	Aft.	Even.	Aft.
Percentage (Fat	...	...	...	...	...	21.7	18.5	2.1	1.5	15.7	17.3	16.7	16.0
Composition of Solids other than Fat	...	...	...	...	...	4.79	4.91	11.41	16.49	5.23	6.95	5.27	4.61
the Milk	...	...	...	...	...	8.80	8.83	7.57	8.91	8.45	8.53	9.11	9.03
Total Solids	...	...	...	...	...	13.68	13.74	18.98	25.40	13.68	15.48	14.38	13.64
Actual weight of Fat, in lbs.	...	...	...	...	...	1.039	0.968	0.240	0.247	0.821	1.202	0.880	0.738
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	1.93	1.63	0.16	0.13	1.33	1.48	1.52	1.44
Points—	...	...	...	...	...			
For weight of Milk (lbs.)	...	...	...	...	...	58.90		5.30		48.00		49.00	
For weight of Fat (lbs. × 20)	...	...	...	...	...	59.62		17.22		58.10		47.38	
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	20.76		1.88		16.28		17.84	
Total Points for Milk...	...	...	...	...	...	139.28		24.40		122.38		114.22	
Deductions ...	...	...	...	...	...	—		10.00		20.00		—	
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	139.28		14.40		102.38		114.22	
Points for time since Calving	...	...	...	...	...	1.00		6.80		4.30		0.90	
TOTAL POINTS GAINED	...	...	...	...	...	140.28		21.20		106.68		115.12	
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	165.42		—		115.68		132.05	
Points for time since Calving	...	...	...	...	...	1.00		—		4.30		0.90	
Total Points per 1,000 lbs. live weight	...	...	...	...	...	166.42		—		119.98		132.95	
Remarks and Awards	...	...	...	...	...	3rd Prize.				Highly Commended.		Highly Commended.	

CLASS 25.—JERSEY COW, ENGLISH OR ISLAND BRED (BORN ON OR PREVIOUS TO 1ST AUGUST, 1933)—Continued.

Number Name ...	...	...	...	...	...	208 Royalist's Spotted Beauty.	209 Puck.	212 Ronald's Royal Dream.	213 Cambric Ella 2nd.
Born ...	...	...	...	...	...	Oct. 30, 1932. 884 June 3, 114	Feb. 9, 1933. 942 July 9, 79	June 10, 1930. 730 April 24, 154	Nov. 10, 1930. 955 Aug. 6, 90
Live weight, in lbs. ...	...	...	...	...	...	Even. Morn. Aft. 10-1 14-2 15-0	Even. Morn. Aft. 15-4 13-9 14-3	Even. Morn. Aft. 13-4 14-0 14-1	Even. Morn. Aft. 10-0 18-3 18-8
Last Calved ...	...	...	...	...	...	5-97 5-15 4-78 9-25 9-13 9-20 15-22 14-28 13-98	5-87 6-42 6-32 9-20 9-04 9-30 16-16 15-48 15-62	4-56 4-62 4-62 8-82 8-66 8-78 13-38 13-28 13-40	4-84 4-37 5-33 9-18 9-23 9-35 14-02 13-60 14-68
Days since Calving ...	...	...	...	...	...	0-961 0-731 0-717 1-49 1-30 1-38	1-038 0-892 0-904 1-43 1-26 1-33	0-611 1-21 1-24 1-18 1-18 1-24	0-920 0-800 1-002 1-74 1-69 1-76
Weight of Milk ...	...	...	...	...	...	...	...	...	...
Percentage { Fat ...	...	...	...	...	...	...	...	...	...
Composition of { Solids other than Fat ...	...	...	...	...	...	...	...	...	...
the Milk { Total Solids ...	...	...	...	...	...	...	...	...	...
Actual weight of Fat, in lbs. ...	...	...	...	...	...	...	...	...	...
Actual weight of Solids other than Fat, in lbs. ...	...	...	...	...	...	...	...	...	...
Points—	...	...	...	...	...	...	...	...	...
For weight of Milk (lbs.) ...	...	...	...	...	...	45-30 48-18 16-68	43-60 57-08 16-08	41-50 38-18 14-52	56-10 54-44 20-76
For weight of Fat (lbs. × 20) ...	...	...	...	...	...	...	...	...	...
For weight of Solids other than Fat (lbs. × 4) ...	...	...	...	...	...	...	...	...	...
Total Points for Milk ...	...	...	...	...	...	110-16	116-76	94-20	131-30
Deductions ...	...	...	...	...	...	...	...	...	...
TOTAL POINTS GAINED FOR MILK ...	...	...	...	...	...	110-16	116-76	94-20	131-30
Points for time since Calving ...	...	...	...	...	...	7-40	3-90	11-40	1-00
TOTAL POINTS GAINED ...	...	...	...	...	...	117-56	120-66	105-60	132-30
Points gained for Milk per 1,000 lbs. live weight ...	...	...	...	...	...	124-62	123-95	120-04	137-49
Points for time since Calving ...	...	...	...	...	...	7-40	3-90	11-40	1-00
Total Points per 1,000 lbs. live weight ...	...	...	...	...	...	132-02	127-85	140-44	138-49
Remarks and Awards ...	...	...	...	...	...	Highly Commended.	Highly Commended.	Highly Commended.	4th Prize.

CLASS 25.—JERSEY COW, ENGLISH OR ISLAND BRED (BORN ON OR PREVIOUS TO 1ST AUGUST, 1933)—Continued.

Number Name	...	...	...	...	...	214 Byrne.	215 Robin's Spotted Daby.	216 Madrup.	218 Bolhayes Zeldia's Queen.
Born ...	...	...	...	...	...	Feb. 17, 1932.	June 24, 1933.	Sept. 3, 1931.	Mar. 17, 1931.
Live weight, in lbs. ...	...	...	...	...	...	973	727	846	913
Last Calved ...	...	...	...	...	...	June 8.	Aug. 28.	June 9.	April 3.
Days since Calving ...	...	...	...	...	...	109	28	108	175
Weight of Milk	...	...	...	...	...	Even. Morn. Aft.	Even. Morn. Aft.	Even. Morn. Aft.	Even. Morn. Aft.
Percentage (Fat	...	...	...	...	...	18.5 15.9 17.0	18.5 10.0 17.4	19.4 19.5 20.4	13.2 13.2 12.0
Composition of Solids other than Fat	...	...	...	...	...	4.38 8.54 8.65	4.82 8.72 8.90	3.81 8.47 8.95	5.82 8.70 8.66
the Milk Total Solids	...	...	...	...	...	12.92 12.94 13.08	13.54 14.48 14.00	12.22 12.28 13.76	13.64 14.02 13.64
Actual weight of Fat, in lbs.	...	...	...	...	...	0.810 0.690 0.753	0.892 0.866 0.887	0.722 0.743 0.981	0.640 0.702 0.598
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	1.58 1.37 1.47	1.61 1.45 1.55	1.65 1.65 1.83	1.15 1.15 1.04
Points—	...	...	...	...	...	51.40	51.00	50.30	38.40
For weight of Milk (lbs.)	...	...	...	...	...	45.06	52.00	48.92	38.98
For weight of Fat (lbs. × 20)	...	...	...	...	...	17.68	18.44	20.52	13.36
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	...	...	...	...
Total Points for Milk...	...	...	...	...	...	114.14	123.24	128.74	90.74
Deductions ...	...	...	...	...	...	—	—	10.00	—
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	114.14	123.24	118.74	90.74
Points for time since Calving	...	...	...	...	...	6.90	—	6.80	12.00
TOTAL POINTS GAINED	...	...	...	...	...	121.04	123.24	125.54	102.74
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	117.31	169.52	140.35	90.39
Points for time since Calving	...	...	...	...	...	6.90	—	6.80	12.00
Total Points per 1,000 lbs. live weight	...	...	...	...	...	124.21	169.52	147.15	111.39
Remarks and Awards	...	...	...	...	...	Highly Commended.	Reserve.	7th Prize.	Highly Commended.

CLASS 25.—JERSEY COW, ENGLISH OR ISLAND BREED (BORN ON OR PREVIOUS TO 1ST AUGUST, 1933)—Continued.

Number Name	...	...	...	...	...	221 Silver Crown 31st.	223 White Hill Majestic Bess.	224 Carmel Clarinda.	226 Lola.
Born ...	...	...	...	...	...	April 25, 1933. 786	Nov. 14, 1931. 914	July 31, 1932. 716	April 27, 1930. 857
Live weight, in lbs. ...	...	...	...	...	...	Feb. 1. 236	Aug. 31. 25	May 10. 129	Mar. 25. 184
Last Calved ...	...	...	...	...	...	...	...	...	...
Days since Calving	...	...	...	...	...	...	...	...	...
Weight of Milk	...	...	...	...	...	Even. Morn. Aft. 10.4 9.1 10.7	Even. Morn. Aft. 15.1 14.6 15.0	Even. Morn. Aft. 14.0 13.6 16.1	Even. Morn. Aft. 12.6 9.5 14.7
Percentage { Fat ...	...	...	...	...	...	3.73 4.67 4.62	6.86 6.44 5.57	5.24 4.75 4.78	6.19 4.10 6.27
Composition of { Solids other than Fat ...	...	...	...	...	...	8.97 9.37 9.41	9.24 9.22 9.19	8.78 8.01 8.56	9.17 9.10 9.13
the Milk { Total Solids ...	...	...	...	...	...	12.70 14.04 14.06	16.10 15.66 14.76	14.02 13.66 13.34	15.36 13.20 15.40
Actual weight of Fat, in lbs. ...	...	...	...	...	...	0.488 0.425 0.494	1.036 0.940 0.836	0.734 0.646 0.770	0.780 0.390 0.922
Actual weight of Solids other than Fat, in lbs. ...	...	...	...	...	...	0.43 0.85 1.01	1.40 1.35 1.38	1.23 1.21 1.38	1.16 0.86 1.34
Points—	...	...	...	...	...	...	...	...	...
For weight of Milk (lbs.)	...	...	...	...	...	30.20	44.70	43.70	36.80
For weight of Fat (lbs. × 20)	...	...	...	...	...	26.14	56.24	43.00	41.84
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	11.16	16.52	15.28	13.44
Total Points for Milk ...	...	...	...	...	...	67.50	117.46	101.98	92.08
Deductions ...	...	...	...	...	...	...	...	...	...
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	67.50	117.46	101.98	92.08
Points for time since Calving	...	...	...	...	...	12.00	—	8.90	12.00
TOTAL POINTS GAINED	...	...	...	...	...	79.50	117.46	110.88	104.08
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	85.88	128.51	142.43	107.44
Points for time since Calving	...	...	...	...	...	12.00	—	8.90	12.00
Total Points per 1,000 lbs. live weight	...	...	...	...	...	97.88	128.51	151.33	119.44
Remarks and Awards	...	...	...	...	...	Highly Commended.	Highly Commended.	Highly Commended.	Highly Commended.

CLASS 26.—JERSEY COW, ENGLISH OR ISLAND BRED, ENTERED IN OR ACCEPTED FOR THE HERD BOOK. BORN AFTER 1ST AUGUST, 1933, AND WHICH HAS PRODUCED TWO OR MORE CALVES.

Number Name	231 Peggy Girl.	234 Normanby Sweep's Claudette.	235 Arkona's Rosy.	237 Larkspur.
	Nov. 11, 1933. Nov. 851 June 6. 111	June 5, 1934. 787 Aug. 27. 29	May 29, 1934. 724 Aug. 19. 37	Oct. 26, 1934. 822 May 16. 132
Born	Even. Morn. Aft.	Even. Morn. Aft.	Even. Morn. Aft.	Even. Morn. Aft.
Live weight, in lbs.	10-9 10-7 9-9	5-48 5-71 5-77	5-69 5-44 5-14	5-30 5-77 5-32
Last Calved	8-88 9-20 9-33	9-08 8-37 8-61	9-01 8-60 8-34	8-82 8-67 8-70
Days since Calving	15-42 15-54 14-90	14-56 14-08 14-38	14-70 14-04 14-28	14-12 14-44 14-02
Weight of Milk	0-713 0-678 0-551	0-844 0-988 0-929	1-013 0-849 0-881	0-716 0-721 0-724
	0-97 0-98 0-92	1-40 1-55 1-39	1-60 1-34 1-43	1-19 1-08 1-18
Percentage { Fat	31-50	48-80	49-60	39-60
Composition of { Solids other than Fat	38-84	55-22	54-86	43-22
the Milk { Total Solids	11-48	17-36	17-48	13-80
Actual weight of Fat, in lbs.	81-82	121-38	121-94	90-62
Actual weight of Solids other than Fat, in lbs.	—	—	—	—
Points—	81-82	121-38	121-94	90-62
For weight of Milk (lbs.)	81-82	121-38	121-94	90-62
For weight of Fat (lbs. × 20)	7-10	—	—	9-20
For weight of Solids other than Fat (lbs. × 4)	88-92	121-38	121-94	105-82
Total Points for Milk...	96-15	154-23	168-43	117-54
Deductions ...	7-10	—	—	9-20
TOTAL POINTS GAINED FOR MILK ...	103-25	154-23	168-43	126-74
Points for time since Calving	Highly Commended.	2nd Prize.	1st Prize.	6th Prize.
TOTAL POINTS GAINED				
Points gained for Milk per 1,000 lbs. live weight...				
Points for time since Calving ...				
Total Points per 1,000 lbs. live weight				
Remarks and Awards				

CLASS 26.—JERSEY COW, ENGLISH OR ISLAND BRED (BORN AFTER 1ST AUGUST, 1933)—Continued.

Number Name ...	...	...	...	...	...	242 Moors Mahonia.	244 Delightful Dallath.	246 Hautville Orange.	247 Honbury Frirose 71st.
Born ...	...	...	...	...	...	July 7, 1935. 699	Oct. 19, 1934. 947	Aug. 12, 1933. 957	Feb. 18, 1934. 810
Live weight, in lbs. ...	...	...	...	...	...	Aug. 30. 26	Aug. 23. 33	April 3. 175	June 6. 111
Last Calved ...	...	...	...	...	...	...	...	...	...
Days since Calving ...	...	...	...	...	...	Even. Morn. Aft. 12.3 10.6 16.0	Even. Morn. Aft. 14.2 12.3 13.8	Even. Morn. Aft. 11.6 12.0 12.2	Even. Morn. Aft. 17.5 13.5 14.8
Weight of Milk ...	...	...	...	...	...	5.23 3.37 5.60 9.33 9.03 8.88 14.58 13.00 14.48 0.643 0.357 0.896 1.15 1.02 1.42	6.70 5.57 6.18 9.74 9.70 9.52 16.44 15.36 15.70 0.351 0.085 0.853 1.38 1.20 1.31	5.86 5.04 4.59 9.58 9.50 8.77 15.44 15.44 13.36 0.680 0.713 0.560 1.11 1.14 1.07	6.20 4.11 4.65 9.52 9.23 9.21 15.72 13.31 13.86 1.085 0.555 0.688 1.67 1.25 1.36
Percentage of Fat ...	...	...	...	...	...	...	...	...	...
Composition of Milk ...	...	...	...	...	...	...	...	...	...
Actual weight of Fat, in lbs. ...	...	...	...	...	...	...	...	...	...
Actual weight of Solids other than Fat, in lbs. ...	...	...	...	...	...	...	...	...	...
Points—	...	...	...	...	...	...	...	...	...
For weight of Milk (lbs.) ...	...	...	...	...	...	38.90	40.30	35.80	45.80
For weight of Fat (lbs. × 20) ...	...	...	...	...	...	37.92	49.78	39.06	46.56
For weight of Solids other than Fat (lbs. × 4) ...	...	...	...	...	...	14.36	15.56	13.28	17.12
Total Points for Milk ...	...	...	...	...	...	91.18	105.64	88.14	109.48
Deductions ...	...	...	...	...	...	—	—	—	—
TOTAL POINTS GAINED FOR MILK ...	...	...	...	...	...	91.18	105.64	88.14	109.48
Points for time since Calving ...	...	...	...	...	...	—	—	12.00	7.10
TOTAL POINTS GAINED ...	...	...	...	...	...	91.18	105.64	100.14	116.58
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	130.44	111.55	92.10	135.16
Points for time since Calving ...	...	...	...	...	...	—	—	12.00	7.10
Total Points per 1,000 lbs. live weight ...	...	...	...	...	...	130.44	111.55	104.10	142.26
Remarks and Awards ...	...	...	...	...	...	Highly Commended.	7th Prize.	Reserve.	3rd Prize.

CLASS 26.—JERSEY COW, ENGLISH OR ISLAND BRED (BORN AFTER 1ST AUGUST, 1933)—Continued.

Number Name	...	...	...	...	...	...	...	...	...	249 Lucky Baby Girl.	250 The Poplar's Pride Girl.
Born	...	...	...	...	...	...	...	...	...	Dec. 6, 1933, 1927	June 4, 1934, 859
Live weight, in lbs.	...	...	...	...	...	...	...	...	...	Aug. 29, 27	June 25, 92
Last Calved	...	...	...	...	...	...	...	...	...
Days since Calving	...	...	...	...	...	...	...	...	...
Weight of Milk	...	...	...	...	...	...	...	...	...	Even.	Even.
Percentage (Fat	...	...	...	...	...	...	...	...	...	Morn.	Morn.
Composition of	...	...	...	...	...	...	...	...	...	Alt.	Alt.
the Milk	...	...	...	...	...	...	...	...	...
Actual weight of Fat, in lbs.	...	...	...	...	...	...	...	...	...
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	...	...	...	...
Points—	...	...	...	...	...	...	...	...	...
For weight of Milk (lbs.)	...	...	...	...	...	...	...	...	...
For weight of Fat (lbs. × 20)	...	...	...	...	...	...	...	...	...
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	...	...	...	...
Total Points for Milk...	...	...	...	...	...	...	...	...	...
Deductions	...	...	...	...	...	...	...	...	...
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	...	...	...	...
Points for time since Calving	...	...	...	...	...	...	...	...	...
TOTAL POINTS GAINED	...	...	...	...	...	...	...	...	...
Points gained for Milk per 1,000 lbs. live weight...	...	...	...	...	...	...	...	...	...
Points for time since Calving	...	...	...	...	...	...	...	...	...
Total Points per 1,000 lbs. live weight	...	...	...	...	...	...	...	...	...
Remarks and Awards	...	...	...	...	...	...	...	...	...
	...	...	...	...	...	...	...	...	...	4th Prize.	5th Prize.

CLASS 27.—JERSEY HEIFER, ENGLISH OR ISLAND BRED, ENTERED IN OR ELIGIBLE FOR THE HERD BOOK, AND WHICH HAS PRODUCED HER FIRST AND ONLY CALF AT OR UNDER THE AGE OF 2½ YEARS.

Number Name	...	...	...	...	...	253 Ovaltime Wizard's Kathleen.	254 Slate House Standard Bess.	256 Samara's (c/o Princess Gth.	257 Knowle Foxglove.
Born ...	...	...	...	...	...	May 2, 1936, 706 Aug. 17, 39	Mar. 30, 1936, 790 July 27, 60	Aug. 3, 1936, 720 Aug. 8, 48	April 24, 1936, 755 Aug. 10, 46
Live weight, in lbs. ...	...	...	...	...	...	...	...	...	...
Last Calved ...	...	...	...	...	...	...	...	...	...
Days since Calving ...	...	...	...	...	...	...	...	...	...
Weight of Milk	...	...	...	...	...	Even. 12.1 Morn. 11.2 Aft. 10.8	Even. 10.2 Morn. 7.6 Aft. 9.3	Even. 9.4 Morn. 8.8 Aft. 8.9	Even. 12.9 Morn. 15.4 Aft. 14.2
Percentage (Fat	...	...	...	...	...	5.37 9.31 8.94 9.32	8.68 4.79 4.66	6.08 7.23 5.91	4.69 7.82 5.24
Composition of Solids other than Fat	...	...	...	...	...	14.68 15.10 14.88	8.66 9.19 8.66	9.62 9.55 9.77	8.70 9.42 8.68
the Milk Total Solids	...	...	...	...	...	0.650 0.690 0.660	17.34 13.08 13.32	15.70 16.78 15.68	13.48 17.24 13.92
Actual weight of Fat, in lbs.	...	...	...	...	...	1.13 1.00 1.01	0.885 0.364 0.433	0.572 0.636 0.526	0.605 1.204 0.744
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	...	0.88 0.70 0.81	0.90 0.84 0.87	1.13 1.45 1.23
Points—	...	...	...	...	...	...	...	...	...
For weight of Milk (lbs.)	...	...	...	...	...	34.10 38.80 12.56	27.10 33.64 9.56	27.10 34.68 10.44	42.50 51.06 15.24
For weight of Fat (lbs. × 20)	...	...	...	...	...	...	...	...	...
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	...	...	...	...
Total Points for Milk	...	...	...	...	...	85.46	70.30	72.22	108.80
Deductions	...	...	...	...	...	...	...	...	...
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	85.46	70.30	72.22	108.80
Points for time since Calving	...	...	...	...	...	—	2.00	0.80	0.60
TOTAL POINTS GAINED	...	...	...	...	...	85.46	72.30	73.02	109.40
Points gained for Milk per 1,000 lbs. live weight.	...	...	...	...	...	111.57	88.99	100.31	144.11
Points for time since Calving	...	...	...	...	...	—	2.00	0.80	0.60
Total Points per 1,000 lbs. live weight	...	...	...	...	...	111.57	90.99	101.11	144.71
Remarks and Awards	...	...	...	...	...	6th Prize.	Highly Commended.	Highly Commended.	1st Prize.

CLASS 27.—JERSEY HEIFER, ENGLISH OR ISLAND BREED—Continued.

Number Name ...	...	...	...	...	...	...	...	...	...	...	273 (Gallinule.	275 La Chasserie Nuriel.
Born ...	...	...	...	...	...	...	...	...	...	...	April 25, 1936, 697	Mar. 10, 1936, 809
Live weight, in lbs. ...	...	...	...	...	...	...	...	...	...	...	Aug. 15, 41	July 1, 86
Last Calved ...	...	...	...	...	...	...	...	...	...	...	...	...
Days since Calving ...	...	...	...	...	...	...	...	...	...	...	...	...
Weight of Milk	...	...	...	...	...	...	...	...	...	...	Even. 9.4	Even. 11.2
Percentage { Fat	...	...	...	...	...	...	...	...	...	...	Morn. 7.6	Morn. 13.4
Composition of { Solids other than Fat	...	...	...	...	...	...	...	...	...	...	Aft. 8.8	Aft. 11.8
the Milk { Total Solids	...	...	...	...	...	...	...	...	...	...	...	...
Actual weight of Fat, in lbs. ...	...	...	...	...	...	...	...	...	...	...	6.42	5.48
Actual weight of Solids other than Fat, in lbs. ...	...	...	...	...	...	...	...	...	...	...	9.20	10.12
Points—	...	...	...	...	...	...	...	...	...	...	15.62	15.60
For weight of Milk (lbs.)	...	...	...	...	...	...	...	...	...	...	0.403	0.614
For weight of Fat (lbs. $\times 20$)	...	...	...	...	...	...	...	...	...	...	0.86	1.13
For weight of Solids other than Fat (lbs. $\times 4$)	...	...	...	...	...	...	...	...	...	...	0.77	1.11
Total Points for Milk	...	...	...	...	...	...	...	...	...	...	25.80	36.40
Deductions	...	...	...	...	...	...	...	...	...	...	30.06	35.50
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	...	...	...	...	...	9.28	14.24
Points for time since Calving	...	...	...	...	...	...	...	...	...	...	65.14	86.14
TOTAL POINTS GAINED	...	...	...	...	...	...	...	...	...	...	0.10	4.60
Points gained for Milk per 1,000 lbs. live weight	...	...	...	...	...	...	...	...	...	...	65.24	90.74
Points for time since Calving	...	...	...	...	...	...	...	...	...	...	93.46	106.48
Total Points per 1,000 lbs. live weight	...	...	...	...	...	...	...	...	...	...	0.10	4.60
Remarks and Awards	...	...	...	...	...	...	...	...	...	...	93.56	111.08
	...	...	...	...	...	...	...	...	...	...	Highly Commended.	3rd Prize.

CLASS 30.—DEXTER COW, ENTERED IN OR ACCEPTED FOR THE HERD BOOK. COWS ENTERED IN THIS CLASS MUST HAVE YIELDED A MINIMUM OF 5,000 LBS. AT FIVE YEARS OLD OR OVER, OR 3,750 LBS. AT UNDER FIVE YEARS OLD EITHER DURING A LACTATION PERIOD OF 45 WEEKS, OR FOR ANY ONE COMPLETED YEAR OF A RECOGNISED MILK RECORDING SOCIETY.

Number Name	276 (Trotus, 657 123)	277 Grinstead Trixie 4th. 660 Aug. 29, 27	278 Peure Hobyn Periwinkle 2nd. Jan. 17, 1932, Sept. 15, 10	279 Grinstead Dollie 4th. July 26, 1933, June 3, 114
	Even. Morn. Aft.	Even. Morn. Aft.	Even. Morn. Aft.	Even. Morn. Aft.
Born ...	June 4, 1932, May 25, 123	Aug. 3, 1934, Aug. 29, 27	Jan. 17, 1932, Sept. 15, 10	July 26, 1933, June 3, 114
Live weight, in lbs. ...	Even. Morn. Aft.	Even. Morn. Aft.	Even. Morn. Aft.	Even. Morn. Aft.
Last Calved ...	10-3 10-3 10-2	13-1 13-6 13-0	4-7 7-2 7-3	12-3 11-8 12-0
Days since Calving	5-73 5-63 5-22	4-85 5-00 5-47	13-48 14-40 11-48	3-04 3-79 3-79
Weight of Milk	8-81 8-83 9-00	8-91 8-96 8-67	8-44 7-68 7-72	8-50 8-69 8-81
Percentage (Fat	14-54 14-46 14-22	13-76 13-96 14-14	21-92 22-08 19-20	12-14 12-48 12-60
Composition of Solids other than Fat	0-590 0-580 0-532	0-635 0-680 0-711	0-634 1-037 0-838	0-448 0-447 0-455
the Milk (Total Solids	0-91 0-91 0-92	1-17 1-22 1-13	0-40 0-55 0-56	1-03 1-03 1-06
Actual weight of Fat, in lbs.	30-80	39-70	19-20	39-10
Actual weight of Solids other than Fat, in lbs.	34-04	40-52	50-18	27-00
Points—	10-96	14-08	6-04	12-56
For weight of Milk (lbs.)	75-80	94-30	75-42	75-06
For weight of Fat (lbs. $\times 20$)	—	—	30-00	—
For weight of Solids other than Fat (lbs. $\times 4$)	75-80	94-30	45-42	75-06
Total Points for Milk...	8-30	—	—	7-40
Deductions ...	84-10	94-30	45-42	83-06
TOTAL POINTS GAINED FOR MILK ...	115-37	142-88	68-51	121-06
Points for time since Calving	8-30	—	—	7-40
TOTAL POINTS GAINED	123-67	142-88	68-51	128-46
Points gained for Milk per 1,000 lbs. live weight...	—	—	—	—
Points for time since Calving	—	—	—	—
Total Points per 1,000 lbs. live weight	—	—	—	—
Remarks and Awards	2nd Prize.	1st Prize.	—	3rd Prize.

THE MILKING TRIALS FOR GOATS, 1938.

By THOS. W. PALMER.

An entry of 69 in the two classes easily constitutes a record for the Show. One hardly knows if the earlier date was more suitable for goats, or if goat exhibitors were anxious to show the Council how much they appreciated the promise of more space. Be that as it may, entries were up by no less than 35 on the previous year, while 53 animals competed in the trials.

One goat set up a new record for yield of milk, but was disqualified for insufficiency of butter fat at the morning milking. The yield was 19.8 lbs., with butter fat 2.79 and 5.01. Three other goats gave over 16 lbs., one 15 lbs. and two 14 lbs. At the other end of the scale two goats were disqualified for not yielding the minimum of 5½ lbs. during the 24 hours—the first time this has happened at the Dairy Show for some years.

Class 65. She Goats, First Kidders.—Twenty-nine entries, nine absent (1937, 15 entries, five absent). Miss Harrison's "Hint of Weald," a British Saanen, was first, yield 12.8 lbs., butter fat 3.83 and 3.78, lactation 3.6 (full points), total points 30.42. Miss Pope's "Pull of Bashley," a British goat, was second, yield 13.7 lbs., butter fat 3.18 and 4.11, lactation 1.6, total points 29.82. Miss Pelly's "Theydon Bellaritz," an Anglo-Nubian, was third, yield 10.8 lbs., butter fat 4.55 and 5.46, lactation 1.7, total points 27.01. Mrs. Morcom's "Cornish Puffin," a British goat, was fourth, yield 11.7 lbs., butter fat 3.84 and 3.78, lactation 1.3, total points 25.72; and the same exhibitor's "Cornish Frisky," a British Toggenburg, yield 9.7 lbs., butter fat 4.29 and 4.48, lactation 3.6 (full points), total points 24.99, won the fifth prize offered by the British Goat Society. The Reserve Number was A. G. Dominy's "Nightingale Dusk," a British, yield 10.7 lbs., butter fat 3.36 and 5.03, lactation 1.6, total points 24.84. Miss Webb's "Pitsea Puff," a British Saanen, was Highly Commended, and Miss Skidmore's "Heddon Sandalshoe," a British Saanen, Commended.

Class 66. She Goats, not eligible for Class 65.—Forty entries, seven absent (1937, 19 entries, eight absent). Miss Mostyn Owen's "Mostyn Meecha," a British, was first, yield 16.9 lbs., butter fat 4.01 and 4.68, lactation 2.0, total points 38.80. Miss Gresley Hall's "Webb Demeter," a British Toggenburg, was second, yield 16.9 lbs., butter fat 4.16 and 3.42, lactation 2.0, total points 37.1. Miss Harrison's "Humble of Weald," a British Saanen, was third, yield 15.1 lbs., butter fat 3.57 and 3.43, lactation 2.1, total points 32.6. Mrs. Greatrex' "Theydon Barda," an Anglo-Nubian, was fourth, yield 13.8 lbs., butter fat 4.31 and 4.84, lactation 1.0, total points 32.44. The fifth prize offered by the British Goat Society was awarded to Miss

Harrison's "Hartye of Weald," a British Saanen, yield 14.1 lbs., butter fat 3.50 and 3.13, lactation 1.7, total points 29.56. Miss Pope's "Heddon Silver," a British Saanen, was Reserve, yield 13.1 lbs., butter fat 3.66 and 4.07, lactation 2.0, total points 29.51. Mrs. Browell's "Heddon Cicely," Mrs. Morcom's "Cornish Macedoine," Mrs. Paine's "Tamar Ruffle" and Miss Mostyn Owen's "Mostyn Maysie" all obtained High Commendations, while Miss Bullard's "Milverley Marguerite," Miss Skidmore's "Heddon Caroline," "Heddon Sorceress" and Miss Booth's "Springfield Salvia" were Commended.

Eleven goats which competed at the 1937 Show again entered and of these three were prizewinners. Of the 53 goats competing, no less than 32 had a lower butter fat percentage at the evening milking, a most unusual occurrence; five goats were disqualified for insufficiency of butter fat at the evening milking and two for the same cause at the morning milking.

Class 67. She Goats, Toggenburg.—Six entered for Inspection, five for Milking. The only goat entered in this class to gain any award was Miss Sheppard's "Widdington Willenda," which secured the Straker Challenge Cup with a yield of 8.4 lbs., butter fat 4.27 and 3.65, total points 19.28.

Class 68. She Goats, British Alpine.—Twelve entered for Inspection, ten for Milking, two absentees. Miss Bullard's "Milverley Marguerite" was Commended in Class 66, yield 9.4 lbs., butter fat 3.57 and 3.21, total points 20.61, and in Class 65 Mrs. Dyson's "Yid Teasel" secured the Abbey Cup for the British Alpine goat gaining the highest number of points in Inspection and Milking bred by the exhibitor with a yield of 7.6 lbs., butter fat 4.19 and 4.39, total points 17.83.

Class 69. She Goats, Saanen.—Ten entered for Inspection, nine for Milking. In Class 66 Mrs. Browell's "Heddon Cicely" was Highly Commended, yield 11 lbs., butter fat 4.08 and 4.50, total points 25.69. Miss Skidmore's "Heddon Caroline" Commended, yield 9 lbs., butter fat 4.65 and 3.30, total points 20.89. This goat also secured the Saanen Cup (Saanen bred by owner and gaining most points in Inspection and Milking). Miss Booth's "Springfield Salvia" was also Commended, yield 8.6 lbs., butter fat 4.45 and 3.52, total points 20.35.

Class 70. She Goats, British Saanen.—Fifteen entered for Inspection, 14 for Milking, six absent. In Class 65 Miss Harrison's "Hint of Weald" obtained first prize, yield 12.8 lbs., butter fat 3.83 and 3.78, total points 30.42. Miss Webb's "Pitsea Puff" was Highly Commended, yield 10.1 lbs., butter fat 4.19 and 3.78, total points 23.52. Miss Skidmore's "Heddon Sandalshoe" was Commended, yield 8.8 lbs., butter fat 4.55 and 5.14, total points 21.98. In Class 66, Miss Harrison's "Humble

of Weald" was third, yield 15.1 lbs., butter fat 3.57 and 3.43, total points 32.60, also securing the Holmes Pegler Trophy and Chamberlain Cup. The same exhibitor's "Hartye of Weald" was fifth, yield 14.1 lbs., butter fat 3.50 and 3.13, total points 29.56. Miss Pope's "Heddon Silver" was Reserve, yield 13.1 lbs., butter fat 3.66 and 4.07, total points 29.51. Miss Skidmore's "Heddon Sorceress" was Commended, yield 7.8 lbs., butter fat 5.36 and 4.38, total points 20.08.

Class 71. She Goats, Anglo-Nubian.—Twelve entered for Inspection, 11 for Milking, five absent. In Class 65 Miss Pelly's "Theydon Bellaritz" won third prize, yield 10.8 lbs., butter fat 4.55 and 5.46, total points 27.01. She was also awarded the Mundulla Cup. In Class 66, Mrs. Greatrex' "Theydon Barda," won fourth prize, yield 13.8 lbs., butter fat 4.31 and 4.84, total points 32.44. This goat was awarded the Pomeroy and Egerton Cups.

Class 72. She Goats, British Toggenburg.—Eight entered for Inspection, seven for milking. In Class 65, Mrs. Morecom's "Cornish Frisky" won fifth prize, yield 9.7 lbs., butter fat 4.29 and 4.48, total points 24.99. In Class 66 Miss Gresley Hall's "Webb Demeter" won second prize, yield 16.9 lbs., butter fat 4.16 and 3.42, total points 37.10. She was also awarded the Baroness Burdett Coutts Cup and the Dual Purpose Challenge Certificate.

Class 73. She Goats, Any Other Variety.—Fourteen entered for Inspection, 13 for Milking, two absent. In Class 65, Miss Pope's "Pull of Bashley" won second prize, yield 13.7 lbs., butter fat 3.18 and 4.11, total points 29.82. Mrs. Morecom's "Cornish Puffin" won fourth prize, yield 11.7 lbs., butter fat 3.84 and 3.78, total points 25.72. A. G. Dominy's "Nightingale Dusk" was Reserve, yield 10.7 lbs., butter fat 3.36 and 5.03, total points 24.84. In Class 66, Miss Mostyn Owen's "Mostyn Meecha" was awarded first prize, yield 16.9 lbs., butter fat 4.01 and 4.68, total points 38.80. She also secured the Tremedda Selene Cup, the Dewar Trophy and the Dewar Cup, the latter in conjunction with her stable companion, "Mostyn Magic." Mrs. Morecom's "Cornish Macedoine" was Highly Commended, yield 10.3 lbs., butter fat 4.27 and 4.33, total points 26.40. Mrs. Paine's "Tamar Ruffle" was Highly Commended, yield 11.4 lbs., butter fat 3.83 and 3.76, total points 25.21, and Miss Mostyn Owen's "Mostyn Maysie" secured a similar honour with a yield of 9.7 lbs., butter fat 3.86 and 4.48, total points 24.74.

In the tables which follow, it should be noted that the weight of the goat is not given as in previous years, and that instead of an average of four milkings, two milkings over a period of 24 hours are recorded.

CLASS 65.—SHE GOATS (FIRST KIDDERS).

Number Name ..	347 Biddigmore Delightsome.	355 Malpas Matilda.	356 Malpas Marfella.	358 Yid Teasel.	364 Springfield Solace.	367 Kipton Star.
Born ..	Feb. 8, 1936. Mar. 9, 200	Mar. 17, 1936. June 5, 112	Mar. 21, 1936. Mar. 27, 182	April 14, 1936. May 21, 127	May 8, 1936. Mar. 12, 197	Mar. 16, 1936. April 9, 169
Days since Kidding ..	Morn. Even. 2-9 2-8	Morn. Even. 3-9 3-9	Morn. Even. 4-9 4-5	Morn. Even. 3-8 3-8	Morn. Even. 3-6 3-5	Morn. Even. 3-4 3-5
Weight of Milk ..	3-03 3-62 8-15 7-84 12-08 11-46 0-114 0-101 0-236 0-220	3-39 2-70 8-11 8-20 11-50 10-90 0-132 0-105 0-316 0-320	3-13 2-90 8-19 7-94 11-32 10-84 0-153 0-131 0-401 0-357	4-19 4-39 8-43 8-09 12-62 12-48 0-159 0-167 0-320 0-307	4-52 3-94 7-82 7-96 12-34 11-90 0-163 0-138 0-282 0-279	4-08 4-14 8-68 8-40 12-76 12-54 0-139 0-145 0-295 0-294
Percentage { Fat .. Composition of { Solids other than Fat .. the Milk { Total Solids .. Actual weight of Fat, in lbs. .. Actual weight of Solids other than Fat, in lbs. ..	5-70 4-30 1-82	7-80 4-74 2-54	9-40 5-68 3-63	7-60 6-52 2-51	7-10 6-02 2-24	6-00 5-08 2-36
For weight of Milk (lbs.) ..	11-82	15-08	18-11	16-63	15-36	14-94
For weight of Fat (lbs. $\times 20$) ..	11-82	15-08	18-11	16-63	15-36	14-94
For weight of Solids other than Fat (lbs. $\times 4$) ..	2-0	1-1	1-8	1-2	1-9	1-6
Total Points for Milk ..	13-82	16-18	19-91	17-83	17-26	16-54
Deductions ..						
TOTAL POINTS GAINED FOR MILK ..						
Points for time since Kidding ..						
TOTAL POINTS GAINED ..						
Remarks and Awards ..		Disqualified. Under 3% Butter Fat.	Disqualified. Under 3% Butter Fat.			

CLASS 65.—SHE GOATS (FIRST KIDDERS)—*continued*.

Number Name	...	...	...	...	...	368	369	376	381	386	392		
						Ripton Stella, Mar. 16, 1936, April 28, 150	Heddon Sandalshoe, Mar. 8, 1936, Mar. 24, 185	Pitsea Puff, Mar. 7, 1936, Feb. 24, 213	Hint of Weald, May 3, 1935, April 2, 1937, 541	Pack of Hendon, April 27, 1936, May 8, 140	Theydon Bellatza, May 24, 1936, Mar. 31, 178		
Born	...	...	...	...	...	Morn. 3-8	Even. 3-9	Morn. 5-2	Even. 4-9	Morn. 7-0	Even. 5-8	Morn. 5-7	Even. 5-1
Days since Kidding	...	...	...	...	...	4-27	3-94	4-10	3-78	3-83	3-78	4-55	5-46
Weight of Milk	Percentage Composition of the Milk	{ Fat Solids other than Fat Total Solids	...	...	...	8-01	8-24	8-15	8-44	10-10	10-23	8-71	8-76
						12-28	12-18	12-31	11-78	12-41	11-82	16-04	16-58
						0-162	0-154	0-218	0-185	0-268	0-219	0-143	0-159
Actual weight of Fat, in lbs.	...	...	...	...	...	0-214	0-211	0-218	0-185	0-268	0-219	0-259	0-278
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	0-374	0-351	0-424	0-392	0-663	0-466	0-496	0-447
Points—	...	...	...	...	...	7-70	...	10-10	12-80	4-90	10-80	10-80	...
For weight of Milk (lbs.)	...	...	...	...	...	6-32	...	8-06	9-74	6-04	10-74	10-74	...
For weight of Fat (lbs. × 20)	...	...	...	...	...	2-50	...	3-26	4-28	1-90	3-77	3-77	...
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Points for Milk...	...	...	...	...	...	16-52	...	21-42	26-82	12-93	25-31	25-31	...
Deductions	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	16-52	...	21-42	26-82	12-93	25-31	25-31	...
Points for time since Kidding	...	...	...	...	...	1-5	...	2-1	3-6	1-4	1-7	1-7	...
TOTAL POINTS GAINED	...	...	...	...	...	18-02	...	23-52	30-42	14-33	27-01	27-01	...
Remarks and Awards	...	...	...	...	...	...	Commended.	Highly Commended.	1st Prize.	Disqualified, Under 5½ lbs. milk.	3rd Prize.	3rd Prize.	...

CLASS 65.—SHE GOATS (FIRST KIDDERS)—continued.

Number Name ...	397 Webb Dauphinette, Mar. 3, 1936, Mar. 4, 205	398 Cornish Frolic, April 17, 1935, May 20, 1937, 403	400 Cornish Frisky, April 17, 1935, Mar. 8, 1937, 566	401 Petersfield Precocely, Feb. 21, 1936, April 15, 163	402 Bitterne Folgy, April 20, 1936, Mar. 14, 195	403 Cornish Puddin, May 5, 1936, May 9, 139
Born ...	Morn. Even. 4-2 4-0	Morn. Even. 3-7 3-2	Morn. Even. 5-3 4-4	Morn. Even. 6-0 5-5	Morn. Even. 3-6 3-5	Morn. Even. 6-1 5-6
Days since Kidding ...	4-37 4-00 7-65 7-80 12-02 11-80 0-184 0-160 0-321 0-312	4-70 3-71 8-70 8-95 13-40 12-66 0-174 0-119 0-322 0-286	4-29 4-48 8-17 8-40 12-46 12-88 0-227 0-197 0-433 0-370	3-01 2-33 7-23 7-85 10-24 10-18 0-181 0-128 0-434 0-432	4-01 4-16 8-23 8-70 12-24 12-80 0-144 0-146 0-206 0-305	3-84 3-78 8-10 8-16 11-94 11-94 0-234 0-212 0-494 0-457
Weight of Milk ...	8-20 6-88 2-53	6-90 5-86 2-43	9-70 8-48 3-21	11-50 6-18 3-46	7-10 5-80 2-40	11-70 8-92 3-80
Percentage (Fat ...)	...	...	...	...	...	...
Composition of ...	...	...	...	...	...	...
the Milk ...	...	...	...	...	...	...
Actual weight of Fat, in lbs. ...	...	...	...	...	...	...
Actual weight of Solids other than Fat, in lbs. ...	...	...	...	...	...	...
Points—	...	...	...	...	...	...
For weight of Milk (lbs.) ...	...	...	...	...	...	...
For weight of Fat (lbs. × 20) ...	...	...	...	...	...	...
For weight of Solids other than Fat (lbs. × 4) ...	...	...	...	...	...	...
Total Points for Milk ...	17-61	15-19	21-39	21-14	15-30	24-42
Deductions ...	...	...	...	...	...	...
TOTAL POINTS GAINED FOR MILK ...	17-61	15-19	21-39	21-14	15-30	24-42
Points for time since Kidding ...	2-0	3-6	3-6	1-6	1-9	1-3
TOTAL POINTS GAINED ...	19-61	18-79	24-99	22-74	17-20	25-72
Remarks and Awards ...	...	...	5th Prize.	Disqualified, Under 39% Butter Fat.	...	4th Prize.

CLASS 65.—SHE GOATS (FIRST KIDDERS)—continued.

Number Name	...	...	...	...	...	407 Pull of Rashley.	412 Nightgate Dusk.
						Feb. 27, 1936, April 11, 167	June 18, 1935, April 17, 161
Born	...	...	...	...	...	Morn. Even.	Morn. Even.
Last Kiddeled	...	...	...	...	...	7.1 6.6	5.8 4.9
Days since Kidding	...	...	...	...	...	3.18 4.11	3.36 5.03
Weight of Milk	...	...	...	...	...	8.18 8.55	8.36 9.09
Percentage { Fat	...	...	...	...	...	11.36 12.66	11.72 14.12
Composition of { Solids other than Fat	...	...	...	...	...	0.226 0.271	0.195 0.246
the Milk { Total Solids	...	...	...	...	...	0.581 0.564	0.485 0.445
Actual weight of Fat, in lbs.	...	...	...	...	...	13.70	10.70
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	9.94	8.82
Points—	...	...	...	...	...	4.58	3.72
For weight of Milk (lbs.)	...	...	...	...	...	28.22	23.24
For weight of Fat (lbs. \times 20)	...	...	...	...	...	—	—
For weight of Solids other than Fat (lbs. \times 4)	...	...	...	...	...	28.22	23.24
Total Points for Milk...	...	...	...	...	...	1.6	1.6
Deductions	...	...	...	...	...	29.82	24.84
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	—	—
Points for time since Kidding	...	...	...	...	...	—	—
TOTAL POINTS GAINED	...	...	...	...	...	—	—
Remarks and Awards	...	...	...	...	...	2nd Prize.	Reserve.

CLASS 66.—SHE GOATS (NOT ELIGIBLE FOR CLASS 67).

Number Name	341 Ketleness.	343 (Horn) of Honiton.	344 Hargrave Christabelle.	345 Widdington Whitesweet.	346 Widdington Willenda.	348 Medverley Marguerite.
Born ...	April 3, 1933.	April 26, 1935.	Mar. 22, 1933.	May 28, 1935.	June 19, 1932.	April 19, 1935.
Last Kidled ...	April 17.	April 12.	April 9.	Mar. 12.	April 11.	Mar. 30.
Days since Kidling ...	161	166	169	197	167	179
Weight of Milk	Morn. 3.4 Even. 2.6	Morn. 3.2 Even. 2.6	Morn. 4.3 Even. 3.9	Morn. 3.8 Even. 3.7	Morn. 4.0 Even. 4.4	Morn. 4.8 Even. 4.6
Percentage { Fat ...	3.48 3.03	4.02 4.27	3.47 3.73	4.18 4.13	4.27 3.65	3.57 3.21
Composition of { Solids other than Fat ...	7.08 8.25	8.30 8.31	8.17 8.15	8.70 8.53	8.03 7.73	8.45 8.17
the Milk { Total Solids ...	11.46 11.28	13.22 12.58	11.64 11.88	12.88 12.66	12.30 11.38	12.02 11.38
Actual weight of Fat, in lbs. ...	0.118 0.079	0.157 0.111	0.140 0.145	0.159 0.153	0.171 0.161	0.171 0.148
Actual weight of Solids other than Fat, in lbs. ...	0.271 0.215	0.266 0.216	0.351 0.318	0.331 0.316	0.321 0.340	0.406 0.376
Points—						
For weight of Milk (lbs.)	0.00	5.80	8.20	7.50	8.40	9.40
For weight of Fat (lbs. $\times 20$)	3.04	5.36	5.88	6.24	6.04	6.38
For weight of Solids other than Fat (lbs. $\times 4$)	1.04	1.03	2.08	2.59	2.04	3.13
Total Points for Milk...	11.88	13.09	16.76	16.33	17.08	18.01
Deductions ...	—	—	—	—	—	—
TOTAL POINTS GAINED FOR MILK ...	11.88	13.09	16.76	16.33	17.08	18.01
Points for time since Kidling	1.6	1.6	1.6	1.9	1.6	1.7
TOTAL POINTS GAINED	13.48	14.69	18.36	18.23	19.23	20.61
Remarks and Awards						Commended.

CLASS 66.—SHE GOATS (NOT ELIGIBLE FOR CLASS 65)—*continued.*

Number	Name	...	...	...	...
Born	Highland Mauriette.	Mar. 2, 1935, Feb. 4, 2-23	Morn. 5-0	Eyen. 4-5	349
Last Kidled	349
Days since Kidling	349
Weight of Milk	349
Percentage Composition of Fat	349
the MILK Total Solids	349
Actual weight of Fat, in lbs.	349
Actual weight of Solids other than Fat, in lbs.	349
Points—	349
For weight of Milk (lbs.)	349
For weight of Fat (lbs. × 20)	349
For weight of Solids other than Fat (lbs. × 4)	349
Total Points for Milk... Deductions	349
TOTAL POINTS GAINED FOR MILK	349
Points for time since Kidling	349
TOTAL POINTS GAINED	349
Remarks and Awards	349

CLASS 66.—SHE GOATS (NOT ELIGIBLE FOR CLASS 65)—continued.

Number Name ..	302 Jacynth of Delamere.	303 Jean of Delamere.	305 Springfield Salvia.	370 Heddon Sorceress.	371 Heddon Silver.	380 Wadhyn Mayflower.
Born ...	Jan. 31, 1933. Mar. 7, 202	Jan. 24, 1933. Mar. 24, 1937. 550	Mar. 4, 1934. Feb. 22, 215	Mar. 19, 1934. Mar. 3, 206	Mar. 11, 1935. Mar. 6, 203	May 15, 1935. Mar. 30, 179
Last Kidled ...	Morn. Even. 2·7 2·6	Morn. Even. 3·5 3·4	Morn. Even. 4·3 4·3	Morn. Even. 4·1 3·7	Morn. Even. 6·9 6·2	Morn. Even. 4·1 3·8
Days since Kidling ...	4·40 4·41 8·51 8·87 13·00 13·28	4·83 4·05 8·03 7·95 12·86 12·00	4·45 3·52 8·07 8·28 12·52 11·80	5·36 4·38 8·48 8·40 13·84 12·78	3·66 4·07 8·02 8·47 11·68 12·54	4·23 4·28 8·33 8·84 12·56 13·12
Actual weight of Fat, in lbs.	0·121 0·115 0·230 0·231	0·169 0·138 0·281 0·270	0·191 0·151 0·347 0·356	0·220 0·162 0·348 0·311	0·253 0·252 0·553 0·525	0·173 0·163 0·342 0·336
Actual weight of Solids other than Fat, in lbs.	5·30 4·72 1·84	6·90 6·14 2·20	8·60 6·84 2·81	7·80 7·64 2·04	13·10 10·10 4·31	7·90 6·72 2·71
For weight of Milk (lbs.)	11·86	15·24	18·25	18·08	27·51	17·33
For weight of Fat (lbs. × 20)	—	—	—	—	—	—
For weight of Solids other than Fat (lbs. × 4)	—	—	—	—	—	—
Total Points for Milk	11·86	15·24	18·25	18·08	27·51	17·33
Deductions ...	2·0	3·6	2·1	2·0	2·0	1·7
TOTAL POINTS GAINED FOR MILK	13·86	18·84	20·35	20·08	29·51	19·03
Points for time since Kidling	...	...	...	...	...	...
TOTAL POINTS GAINED	...	...	...	...	...	...
Remarks and Awards	Disqualified. Under 5½ lbs. Milk.	...	Commented.	Commented.	Reserve.	...

CLASS 66.—SHE GOATS (NOT ELIGIBLE FOR CLASS 65)—continued.

Number Name ...	382 Hartie of Weald.	383 Humble of Weald.	388 Marchurst Syrup.	390 Theydon Barla.	391 Theydon Butterkin.	395 Malpas Merrifegs.
Born ...	April 30, 1933.	May 26, 1934.	April 21, 1935.	Feb. 16, 1933.	April 7, 1935.	May 27, 1935.
Last KidDED ...	Mar. 30,	Feb. 25,	Aug. 8,	June 12,	April 13,	April 17,
Days since KidDing ...	179	212	48	105	165	161
Weight of Milk ...	Morn. 7.9 Even. 6.2	Morn. 8.2 Even. 6.9	Morn. 3.0 Even. 2.8	Morn. 7.1 Even. 6.7	Morn. 3.4 Even. 2.9	Morn. 3.0 Even. 2.8
Percentage (Fat ...)	3.50	3.43	5.53	4.31	4.27	5.98
Composition of Solids other than Fat ...	7.62	7.81	9.33	9.09	8.91	10.08
the Milk (Total Solids ...)	11.12	11.24	14.86	13.40	13.18	16.06
Actual weight of Fat, in lbs. ...	0.277	0.237	0.166	0.306	0.145	0.175
Actual weight of Solids other than Fat, in lbs. ...	0.602	0.539	0.280	0.645	0.303	0.302
Points—						
For weight of Milk (lbs.) ...	14.10	15.10	5.80	13.80	6.30	5.80
For weight of Fat (lbs. $\times 20$) ...	9.42	10.60	7.36	12.60	6.40	6.04
For weight of Solids other than Fat (lbs. $\times 4$) ...	4.34	4.80	2.14	5.04	2.29	2.34
Total Points for Milk ...	27.86	30.50	15.30	31.44	14.99	14.78
Deductions ...	—	—	—	—	—	—
TOTAL POINTS GAINED FOR MILK ...	27.86	30.50	15.30	31.44	14.99	14.78
Points for time since KidDing ...	1.7	2.1	0.4	1.0	1.6	1.6
TOTAL POINTS GAINED ...	29.56	32.60	15.70	32.44	16.59	16.38
Remarks and Awards ...	5th Prize.	3rd Prize.		4th Prize.		

CLASS 66.—SHE GOATS (NOT ELIGIBLE FOR CLASS 65)—continued.

Number Name	...	...	...	...	...	399 Cornish Fraline.	404 Cornish Playful.	405 Cornish Macedoine.	409 Tamar Rudle.	410 Stratvale Tulip.
Born	...	...	...	...	...	Mar. 27, 1933.	Feb. 21, 1933.	April 25, 1935.	Mar. 10, 1933.	April 1, 1932.
Last Kidled	...	...	...	...	...	Mar. 20.	Mar. 3.	Mar. 16, 1937.	May 17.	April 24.
Days since Kidling	...	...	...	...	...	189	206	538	131	154
Weight of Milk	...	...	...	...	...	Morn. Even.	Morn. Even.	Morn. Even.	Morn. Even.	Morn. Even.
Percentage { Fat	...	...	...	...	...	8-9 7-9	4-4 3-8	5-3 5-0	6-0 5-4	2-9 2-5
Composition of { Solids other than Fat	...	...	...	...	...	3-31 2-86	4-36 3-51	4-27 4-33	3-83 3-76	7-53 7-39
the Milk { Total Solids	...	...	...	...	...	8-47 8-76	7-88 8-01	8-93 8-73	8-55 8-32	8-25 8-77
Actual weight of Fat, in lbs.	...	...	...	...	...	11-78 11-62	12-24 11-52	13-20 13-05	12-38 12-08	15-78 16-16
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	0-265 0-226	0-192 0-133	0-226 0-217	0-230 0-203	0-218 0-185
Points—	...	...	...	...	...	0-754 0-692	0-347 0-304	0-473 0-437	0-513 0-449	0-239 0-219
For weight of Milk (lbs.)	...	...	...	...	...	10-80	8-20	10-30	11-40	5-40
For weight of Fat (lbs. × 20)	...	...	...	...	...	10-42	6-50	8-86	8-66	8-06
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	5-78	2-60	3-04	3-85	1-83
Total Points for Milk...	...	...	...	...	...	33-00	17-30	22-80	23-91	15-20
Deductions ...	...	...	...	...	...	—	—	—	—	—
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	33-00	17-30	22-80	23-91	15-20
Points for time since Kidling	...	...	...	...	...	1-8	2-0	3-6	1-3	1-5
TOTAL POINTS GAINED	...	...	...	...	...	34-80	19-30	26-40	25-21	16-79
Remarks and Awards	...	...	...	...	...	Disqualified. Under 3% Butter Fat.		Highly Commended.	Highly Commended.	
	...	...	...	...	...	2nd Prize.				

CLASS 66.—SHE GOATS (NOT ELIGIBLE FOR CLASS 65)—*continued*.

Number Name ...	...	...	...	...	...	413 Mostyn Meecha, April 6, 1934, Mar. 7, 202	414 Mostyn Maysle, Feb. 13, 1934, Mar. 19, 1937, 555	415 Bitterne Wallflower, Feb. 12, 1935, July 30, 57
Born ...	...	...	...	...	...	Morn. Even. 8.6 8.3	Morn. Even. 5.1 4.6	Morn. Even. 10.5 9.3
Last Kidled ...	...	...	...	...	...	...	...	...
Days since Kidling ...	...	...	...	...	...	...	...	...
Weight of Milk ...	...	...	...	...	...	...	...	...
Percentage of Fat ...	...	...	...	...	...	4.01 4.68	3.86 4.48	2.70 5.01
Composition of Milk { Solids other than Fat ...	...	...	...	...	...	7.81 7.68	8.80 8.58	8.31 8.73
Actual weight of Fat, in lbs. ...	...	...	...	...	...	11.82 12.36	12.66 13.06	11.10 13.74
Actual weight of Solids other than Fat, in lbs. ...	...	...	...	...	...	0.345 0.388	0.197 0.206	0.263 0.466
Points—	...	...	...	...	...	0.672 0.637	0.449 0.395	0.873 0.812
For weight of Milk (lbs.) ...	...	...	...	...	...	16.90	9.70	19.80
For weight of Fat (lbs. \times 20) ...	...	...	...	...	...	14.66	8.06	15.18
For weight of Solids other than Fat (lbs. \times 4) ...	...	...	...	...	...	5.24	3.38	6.74
Total Points for Milk ...	...	...	...	...	...	36.80	21.14	41.72
Deductions ...	...	...	...	...	...	...	...	...
TOTAL POINTS GAINED FOR MILK ...	...	...	...	...	...	36.80	21.14	41.72
Points for time since Kidling ...	...	...	...	...	...	2.0	3.6	0.5
TOTAL POINTS GAINED ...	...	...	...	...	...	38.80	24.74	42.22
Remarks and Awards ...	...	...	...	...	...	1st Prize.	Highly Commended.	Disqualified. Under 3% Butter Fat.

CLASS 66.—SHE GOATS (NOT ELIGIBLE FOR CLASS 65)—continued.

Number Name	...	...	...	...	...	399 Cornish Frahne.	404 Cornish Playful.	405 Cornish Maccotuch.	409 Tamar Kettle.	410 Stratford Tulp.
Born	...	...	...	...	...	Mar. 27, 1933.	Feb. 21, 1933.	April 25, 1935.	Mar. 10, 1933.	April 1, 1932.
Last Kidled	...	...	...	...	...	Mar. 20.	Mar. 3.	Mar. 16, 1937.	May 17.	April 24.
Days since Kidling	...	...	...	...	...	189	206	558	131	154
Weight of Milk	...	...	...	...	...	Morn. Even.	Morn. Even.	Morn. Even.	Morn. Even.	Morn. Even.
						8-8 8-1	4-4 3-8	5-3 5-0	6-0 5-4	2-9 2-5
Percentage { Fat	...	...	...	...	...	3-31 2-86	4-36 3-51	4-27 4-33	3-83 3-76	7-53 7-39
Composition of { Solids other than Fat	...	...	...	...	...	8-47 8-76	7-88 8-01	8-93 8-73	8-55 8-32	8-25 8-77
the Milk { Total Solids	...	...	...	...	...	11-78 11-68	12-24 11-52	13-20 13-06	12-38 12-08	15-78 16-16
Actual weight of Fat, in lbs.	...	...	...	...	...	0-295 0-226	0-192 0-133	0-226 0-217	0-230 0-203	0-218 0-185
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	0-754 0-692	0-347 0-304	0-473 0-437	0-513 0-449	0-239 0-219
Points—	...	...	...	...	...
For weight of Milk (lbs.)	...	...	...	...	...	16-80	8-20	10-30	11-40	5-40
For weight of Fat (lbs. × 20)	...	...	...	...	...	10-42	6-50	8-86	8-66	8-06
For weight of Solids other than Fat (lbs. × 4)	...	...	...	...	...	5-78	2-60	3-04	3-85	1-83
Total Points for Milk	...	...	...	...	...	33-00	17-30	22-80	23-91	15-20
Deductions	...	...	...	...	...	—	—	—	—	—
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	33-00	17-30	22-80	23-91	15-20
Points for time since Kidling	...	...	...	...	...	1-8	2-0	3-6	1-3	1-5
TOTAL POINTS GAINED	...	...	...	...	...	34-80	19-30	26-40	25-21	16-79
Remarks and Awards	...	...	...	...	...	Disqualified. Under 3% Butter Fat.		Highly Commended.	Highly Commended.	
2nd Prize.	...	...	...	...	...
	...	...	...	...	...	37-10	19-30	26-40	25-21	16-79

CLASS 66.—SHE GOATS (NOT ELIGIBLE FOR CLASS 65)—*continued*.

Number Name ...	...	...	...	...	...	413 Moslyn Needham	414 Moslyn Mayse	415 Biffene Wallflower
Born ...	...	...	...	...	...	April 6, 1934, Mar. 7, 202	Feb. 13, 1934, Mar. 19, 1937, 355	Feb. 12, 1935, July 20, 57
Last Kidled ...	...	...	...	...	...	Morn. Even.	Morn. Even.	Morn. Even.
Days since Kidling ...	...	...	...	...	...	8-6 8-3	5-1 4-6	10-5 9-3
Weight of Milk	...	...	...	...	...	4-01 4-08	3-86 4-48	2-70 5-01
Percentage (Fat	...	...	...	...	...	7-81 7-08	8-80 8-58	8-31 8-73
Composition of Solids other than Fat	...	...	...	...	...	11-82 12-36	12-66 13-06	11-10 13-74
the Milk { Total Solids	...	...	...	...	...	0-345 0-388	0-197 0-206	0-293 0-466
Actual weight of Fat, in lbs.	...	...	...	...	...	0-672 0-637	0-449 0-395	0-873 0-812
Actual weight of Solids other than Fat, in lbs.	...	...	...	...	...	16-90	9-70	19-80
Points—	...	...	...	...	...	14-66	8-06	15-18
For weight of Milk (lbs.)	...	...	...	...	...	5-24	3-38	6-74
For weight of Fat (lbs. $\times 20$)	...	...	...	...	...	36-80	21-14	41-72
For weight of Solids other than Fat (lbs. $\times 4$)	...	...	...	...	...	—	—	—
Total Points for Milk	...	...	...	...	...	36-80	21-14	41-72
Deductions ...	...	...	...	...	...	—	—	—
TOTAL POINTS GAINED FOR MILK	...	...	...	...	...	36-80	21-14	41-72
Points for time since Kidling	...	...	...	...	...	2-0	3-6	0-5
TOTAL POINTS GAINED	...	...	...	...	...	38-80	24-74	42-22
Remarks and Awards	...	...	...	...	...	1st Prize.	Highly Commended.	Disqualified. Under 3% Butter Fat.

THE "ROBERT MOND" CHALLENGE SHIELD AWARDS.

By JAMES MACKINTOSH, O.B.E., N.D.A., N.D.D.

This trophy was presented by Mr. Robert Mond to the British Dairy Farmers' Association in 1919, with the object of encouraging breeders of dairy stock to judge bulls more by the production of their daughters than by the appearance of the bulls themselves.

At the same time a special prize of £10 was also presented by Mr. Mond for two cows or heifers, the progeny of one bull, exhibited at the Dairy Show and gaining the largest number of points above the standard of the classes in which they were exhibited. The entry of two animals for this special prize was taken as equivalent to an entry for the Challenge Shield, but in order to qualify for the latter the two daughters exhibited at the Dairy Show and two additional daughters must have given at least 5,500 lbs. milk containing not less than 3·5 per cent. fat in their first lactation period, or at least 6,500 lbs. milk containing not less than 3·5 per cent. fat in their second or later lactation periods, each lactation period not to exceed 365 days and each competing animal to be in calf within five months of the commencement of the lactation period. The Challenge Shield is then awarded to the group of four daughters complying with these conditions and producing the highest yield of butter fat.

The special prize of £10 has been won at practically all the Dairy Shows since 1920, but the Challenge Shield has been won on only eight occasions. It is probable that entries were restricted for a few years by the fact that the Prize and Shield were open only to Dairy Shorthorns, but since 1922 these trophies have been open to all breeds, and in some respects the qualifying conditions have been made less stringent. Full details are published each year in the schedule of prizes issued before the Show and in the catalogues issued at the Show.

Details of the winning entries have been published annually in the Journal. The weights of butter fat produced by the four daughters of the winning bulls has ranged from 1,281·66 lbs.

to 2,397·5 lbs. This record output was given by the four daughters of Mr. Gordon McWilliam's Jersey bull "Warrior's Cid You'll Do" (15462) and details are given below:—

Daughters.	Milk Yield.	Fat Percentage.	Fat Yield.
	lbs.	%	lbs.
Bollhayes May's Sunrise (12170)	18,006½	4·18	752·67
Bollhayes Jolly Bart (12164) ...	13,486	4·53	610·92
Bollhayes Princess Mary (12177)	12,200	4·87	594·14
Bollhayes Parlourmaid (12173)	9,928¼	4·43	439·82
Total fat yield ...			2,397·55

In 1937-38 only one entry complied with all the conditions. The Shield is therefore awarded to Messrs. Chivers and Son, Ltd., Histon, Cambridge, with the Lincoln Red bull "Bendish Dairy King" (23463). The records of the four daughters of this bull are set out below and the total weight of butter fat produced was 1,872·39 lbs.—the second highest performance achieved since 1925:—

Daughters.	Milk Yield.	Fat Percentage.	Fat Yield.
	lbs.	%	lbs.
Histon Fanny 8th (V. 37, p. 227)	13,029½	4·04	526·23
Histon Paragon 4th (L. 343) ...	7,368¼	4·17	307·25
Histon Acacia 5th (V. 37, p. 226)	15,182	3·97	602·72
Histon Ashleaf 13th (V. 39, p. 194)	10,287½	4·24	436·19
Total fat yield ...			1,872·39

THE DAIRY SHOW BUTTER TESTS, 1938.

By R. H. EVANS, B.Sc.

For the 1938 London Dairy Show Butter Tests the conditions governing awards were essentially the same as at the 1937 Show.

The following scale of points was used and prizes awarded in accordance with the same, viz. :—

One point for every ounce of butter; one point for every completed ten days since calving, deducting the first 40 days, and, in addition, points not exceeding a maximum of 10 for quality of butter (including colour and texture). Maximum allowance for period of lactation, 12 points. Fractions of ounces of butter, and incomplete periods of less than ten days, will be worked out in decimals, and added to the total points.

In the case of cows obtaining the same number of points, the prize will be awarded to the cow that has been the longest time in milk. No prize or other award will be given to animals in the Butter Tests which do not come up to the following standard :—

Breed.	Heifers. Points.	Cows under 5 years. Points.	Cows 5 years and over. Points.
Pedigree Shorthorns	29.7	35.3	41
Non-pedigree Shorthorns	29.7	35.3	41
Lincoln Red Shorthorns	29.7	35.3	41
British Friesians	29.7	35.3	41
South Devons	29.7	35.3	41
Devons	27.0	32.0	37
Red Polls	29.7	35.3	41
Blue Albions	29.7	35.3	41
Welsh	27.0	32.0	37
Ayrshires	29.7	35.3	41
Guernseys	27.0	32.0	37
Jerseys	30.3	36.2	42
Kerries	26.3	31.2	36
Dexters	26.3	31.2	36

A Certificate of Merit and Highly Commended Card will be given to animals, other than prize winners, that reach the above standard.

The following were the number of animals entered and the actual numbers tested at the 1938 Dairy Show.

Breed.	No. Entered.	No. Tested.	No. not eligible for award under Rule 32 (m).
Pedigree Shorthorns ...	26	17	1
Non-pedigree Shorthorns ...	4	4	—
Lincoln Reds ...	5	4	—
British Friesians ...	35	13	2
South Devons ...	10	6	—
Red Polls ...	13	11	—
Ayrshires ...	30	19	—
Guernseys ...	23	19	—
Jerseys ...	69	42	—
Dexters ...	4	4	—
	<u>219</u>	<u>139</u>	<u>3</u>

SHORTHORNS entered in Classes 1, 2, 3, 4, 5, 6 and 7.

Of the 25 Shorthorns which competed in the above classes 17 were pedigree, four non-pedigree and four Lincoln Reds.

The first prize winner was W. J. Wheeler's "Frieth Tiny 4th." This animal yielded 68·7 lbs. of milk from which 3 lbs. 4½ ozs. butter was obtained. The total points amounted to 59·75. This animal was also awarded the Shorthorn Butter Cup.

The second award went to the King's College Farms' cow "Lady," with a milk yield of 68·8 lbs. from which 2 lbs 14 ozs. butter was obtained.

BRITISH FRIESLIANS entered in Classes 8, 9 and 10.

The premier award in the class was awarded to A. J. Creed's cow "Royal Akke 19th" with a milk and butter yield of 88·5 lbs. and 3 lbs. 4½ ozs. respectively.

The Pinkney Park Estate Co.'s, Ltd., cow "Hurdlesgrove Pel Betty 2nd" was second with a milk yield of 73·5 lbs. from which 2 lbs. 15½ ozs. butter was obtained.

SOUTH DEVONS entered among Other Breeds.

Six South Devons were tested. W. Hunt's "Diptford Downs Milkmaid 24th" was awarded a £5 prize. This cow's milk amounted to 58·6 lbs. from which 3 lbs ¼ oz. butter was obtained.

V. Bunday's cow "Westerland Anne" obtained the second place in this class with a milk yield of 63.5 lbs. and a butter yield of 2 lbs. 7½ ozs.

RED POLLS entered among Other Breeds.

Of the 11 animals tested Mrs. R. M. Foot's "White Hill Arrogant Lily" obtained the premier award with a milk and butter yield of 61.2 lbs. and 2 lbs. 12¼ ozs. respectively. The cow "White Hill Canny Blossom," from the same herd, obtained a prize of £3. This cow's milk yield amounted to 51.2 lbs. from which 2 lbs. 1¼ ozs. butter was obtained.

AYRSHIRES entered in Classes 19, 20 and 21.

Nineteen Ayrshires were tested. The first prize was awarded to J. Bone's cow "Sheepcotes Relish." This cow's milk yield amounted to 73.5 lbs. and her butter yield 3 lbs. 3 ozs. The second place was held by A. Watson's cow "Barboigh Liliass 28th." Her milk and butter yield amounted to 72.8 lbs. and 3 lbs. 3¾ ozs. respectively.

GUERNSEYS entered in Classes 22, 23 and 24.

Nineteen Guernseys were tested. The Hon. A. E. Guinness' cow "Bella's Cora 4th of Les Jetteries" obtained the first prize with a yield of 3 lbs. 14½ ozs. butter from 70.1 lbs. milk, showing a butter ratio of 1:17.95.

E. H. Rose's cow "Leweston La Belle 3rd" obtained the second prize with a milk yield of 58.5 lbs. and 2 lbs 12¾ ozs. butter.

JERSEYS entered in Classes 25, 26 and 27.

As many as 69 Jerseys were entered, of which 42 were tested. This figure appears to be a record number of entries from one breed at the London Dairy Show. The premier award was won by J. W. McCallum's cow "Pearcelands Eileen 10th." This cow's yield of milk amounted to 75.5 lbs. from which 3 lbs. 11½ ozs. butter was churned.

The second place in this class was held by the cow "Hot Belle" belonging to G. N. and Miss D. Charrington. This cow yielded 59.4 lbs. of milk and 3 lbs. 4 ozs. butter. The cow was also awarded the National Butter Cup.

DEXTERS.

Only four Dexters put in an appearance. Lady Loder's "Grinstead Trixie 4th" was awarded a prize of £3, and the cow "Crocus," from the same herd, was second.

TROPHIES AND CUPS IN THE AWARDING OF WHICH BUTTER TEST POINTS ARE TAKEN INTO CONSIDERATION.

	Winner	Reserve
	No.	No.
The B.D.F.A. Supreme Championship ...	229	9
Morrison Trophy	229	105
Spencer-Stapleton Cup	173	148
National Butter Cup	227	201
Melvin Cup	3	11
Shorthorn Butter Cup	9	51
South Devon Herd Book Cup	105	106
Busk Cup (Devons)	No Entry.	
Thornton Cup (Red Polls)	110	112
Rowallan Cup (Ayrshires)	148	152
Stagenhoe Cup (Guernseys)	173	175
Blythwood Production Bowl	229	202
Jersey Production Bowl	229	227
Loxwood Jubilee Cup (Jerseys)	229	227
Loder Cup (Dexters)	277	276

Average weight of animals entered in the 1938 Butter Tests.

	lbs.		lbs.
Pedigree Shorthorns (17)	1,292	Red Polls (11)	1,260
Non-pedigree Shorthorns (4)	1,387	Ayrshires (19)	1,120
Lincoln Reds (4)	1,372	Guernseys (19)	908
British Friesians (13)	1,324	Jerseys (42)	820
South Devons (6)	1,529	Dexters (4)	651

Average weight of all breeds=1,087 lbs.

The following table gives the average results for all breeds competing since 1920 :—

Year.	Total No. of Cows.	Average weight 2½ hours' Milk.	Average Yield of Butter.	Average Butter Ratio.	*Average No. of Points.
		lbs.	lbs. ozs.		
1920	111	39	1 9½	24.21	28.25
1921	173	30½	1 6½	25.35	27.68
1922	187	42½	1 8½	27.99	26.31
1923	143	41½	1 11½	24.03	32.23
1924	148	43½	1 12½	24.21	32.55
1925	154	46½	1 13½	25.59	32.61
1926	149	49½	1 15½	26.69	34.68
1928	133	49½	1 14½	27.00	33.93
1929	130	52½	1 13½	28.69	32.48
1930	147	50½	1 13½	28.47	30.12
1931	140	57½	2 0	28.74	34.43
1932	159	56½	1 15½	29.40	32.93
1933	138	51.8	1.91	27.15	32.91
1934	165	55.5	2.0	27.78	34.58
1935	165	55.8	2.191	25.6	34.94
1936	172	57.2	2.17	26.37	44.89
1937	127	58.6	2.07	28.30	41.52
1938	139	51.9	2.09	24.88	43.32

* In 1936, 1937 and 1938 an extra 10 points were awarded for quality.

TABLE I.—NUMBER OF CATTLE TESTED SINCE 1901.

Breed.	1901 to 1915	1919 to 1923	1924	1925	1926	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
Shorthorns	332	190	18	15	23	20	27	21	26	24	18	22	22	21	21	21
Lincoln Reds	55	31	8	10	4	4	4	8	8	5	4	3	10	7	5	4
British Friesians	3	64	23	19	25	19	16	19	16	30	19	16	19	20	21	13
South Devons	40	13	—	3	1	7	9	12	9	19	14	12	10	12	7	6
Devons	—	25	3	8	1	2	1	2	—	4	—	4	4	—	—	—
Red Polls	65	76	17	6	17	17	13	23	22	10	16	26	28	19	9	11
Blue Albions	—	—	4	5	4	—	2	1	1	—	—	—	—	—	—	—
Welsh Blacks	—	4	—	2	1	—	—	—	—	—	4	3	6	2	—	—
Ayrshires	17	38	15	31	26	25	18	21	21	22	12	30	22	27	26	19
Guernseys	51	74	16	18	14	10	10	12	20	12	20	16	21	17	11	19
Jerseys	249	119	32	24	25	22	22	22	18	27	24	25	22	37	28	42
Kerries	15	49	10	7	5	2	4	1	4	1	—	5	—	2	—	—
Dexters	8	25	2	3	3	5	4	5	5	5	7	3	1	4	—	4
TOTALS	835	708	148	151	149	133	130	147	140	159	138	165	165	168	128	139

TABLE II.—NUMBER OF CATTLE OF THE VARIOUS BREEDS TESTED IN RECENT YEARS, WITH THEIR AVERAGE PERIOD OF LACTATION, WEIGHT OF BUTTER, BUTTER RATIOS AND POINTS.

Year.	No.	Breed.	Average No. of Days in Milk.	Average Yield of Milk.	Average Weight of Butter.	Average Butter Ratio.	Average No. of Points.*
1936 ...	20	Shorthorns ...	52	lbs. —	lbs. ozs. 1.99	lbs. 35.60	40.63
1937 ...	21	" ...	40½	60.5	1.97	30.67	38.27
1938 ...	21	" ...	34	57.4	2.04	28.12	40.18
1936 ...	7	Lincoln Reds ...	62	—	2.33	26.58	47.97
1937 ...	5	" ...	52½	63.2	1.95	32.60	39.83
1938 ...	4	" ...	64	50.7	2.29	22.18	47.48
1936 ...	20	British Friesians ...	44	—	2.32	31.15	46.06
1937 ...	21	" ...	28	78.0	2.45	32.93	45.53
1938 ...	13	" ...	37	77.4	2.41	32.17	45.47
1936 ...	12	South Devons ...	36	—	2.64	22.85	52.32
1937 ...	7	" ...	49	46.7	1.99	23.50	41.31
1938 ...	6	" ...	94	48.2	2.08	23.24	46.04
1932 ...	4	Devons ...	103	—	1 5	27.31	27.12
1934 ...	4	" ...	76	—	1 11½	25.19	31.50
1935 ...	4	" ...	42	—	1.95	27.66	31.37
1936 ...	19	Red Polls ...	40	—	1.99	29.27	40.19
1937 ...	9	" ...	81	55.3	1.43	38.58	30.94
1938 ...	11	" ...	56	51.5	1.68	30.58	34.79
1929 ...	2	Blue Albions ...	31	—	1 13½	31.04	29.25
1930 ...	1	" ...	58	—	2 8½	22.00	40.50
1931 ...	1	" ...	26	—	1 10	30.10	26.00
1934 ...	3	Welsh Blacks ...	46	—	1 5	39.07	21.81
1935 ...	6	" ...	31	—	2.01	23.66	32.33
1936 ...	2	" ...	36	—	2.14	26.78	42.87
1936 ...	27	Ayrshires ...	28	—	2.34	24.44	45.00
1937 ...	26	" ...	28½	64.8	2.26	28.67	42.10
1938 ...	19	" ...	25	57.6	2.29	25.19	43.59
1936 ...	17	Guernseys ...	76	—	2.12	23.83	47.33
1937 ...	11	" ...	86½	47.2	1.78	26.51	39.16
1938 ...	19	" ...	76	46.9	1.93	24.31	43.02
1936 ...	37	Jerseys ...	101	—	2.12	21.42	48.49
1937 ...	28	" ...	90½	44.6	2.07	21.56	45.24
1938 ...	42	" ...	85	43.6	2.13	20.48	46.58
1932 ...	1	Kerries ...	92	—	2 0½	20.93	37.70
1934 ...	5	" ...	68	—	2 3	20.22	38.82
1936 ...	2	" ...	75	—	0.97	29.07	40.00
1935 ...	1	Dexters ...	161	—	1.59	25.41	37.50
1936 ...	4	" ...	103	—	1.33	25.89	35.40
1938 ...	4	" ...	68	31.5	1.55	20.32	36.43

* In 1936, 1937 and 1938 an extra 10 points were awarded for quality.

BUTTER TESTS—SHORTHORNS.

No. in Catalogue	Exhibitor	Name of Animal	Live Weight lbs.	Date of Birth	Date of last Calf 1938.	No. of Days in Milk	Milk Yield lbs.	Butter Yield lbs. ozs.	Ratio, viz., lbs. Milk to lbs. Butter.	Duration of Churning Mins.	No. of Points for Butter	No. of Points for Lactation Maximum 12	No. of Points for Quality Maximum 10	Total Number of Points	Awards
1	Major G. Miller Mundy	Knells Elliott Fernleaf 2nd	1387	Mar. 16, 1929	July 11	76	53.4	2 11	19.87	14	43.0	3.6	8	54.6	3rd Prize
2	Major G. Miller Mundy	Redrice Craggs 3rd	1278	June 9, 1933	Aug. 3	53	61.8	1 15½	31.14	30	31.75	1.3	6	39.05	Reserve
3	J. J. McMenemy	Parkhouse Strawberry 16th	1009	March 8, 1932	Sept. 1	24	68.6	2 11½	25.38	22	43.25	—	8	51.25	
6	W. H. Vigus	Revels Glorious	1111	Jan. 15, 1933	Aug. 28	28	70.9	1 13½	38.78	18	20.25	—	6	35.25	1st Prize
9	W. J. Wheeler	Frieth Tiny 4th	1469	Aug. 28, 1932	Sept. 14	11	68.7	3 4½	20.84	20	52.75	—	7	59.75	
10	Chivers & Sons, Ltd.	Histon Duchess 5th	1148	May 15, 1933	July 16	71	63.7	2 1	30.88	14	33.0	3.1	6	42.10	H.C.
11	Chivers & Sons, Ltd.	Histon Barrington 16th	1517	May 1, 1933	Sept. 13	12	55.8	2 8	22.32	43	40.0	—	8	48.00	H.C.
12	John Cronk	Greattew Juanita 2nd	1364	Sept. 25, 1932	July 16	71	72.5	Disqualified							H.C.
13	A. Thomas Loyd	Lockinge Fairy 8th	1405	Oct. 30, 1931	Aug. 21	35	69.6	2 12	25.31	35	44.0	—	6	50.00	
15	J. Barnes	Whittingslow Podger	1403	Mar. 16, 1933	July 27	60	69.1	2 6½	28.72	18	38.5	2.0	7	47.50	H.C.
20	The Duke of West- minster, G.C.Y.O., D.S.O.	Eaton Rosebud 10th	1185	May 28, 1934	Aug. 11	45	45.5	1 5½	34.26	20	21.25	0.5	5	26.75	H.C.
25	Chivers & Sons, Ltd.	Histon Royal Duchess 6th	1171	Jan. 17, 1935	Sept. 8	17	54.4	1 3½	44.07	19	19.75	—	7	26.75	
27	R. Tustian	Greattew Janette 8th	1064	Jan. 22, 1935	Sept. 4	21	50.9	1 8½	32.90	10	24.75	—	6	30.75	H.C.
28	R. Tustian	Greattew Waterloo Baroness	1293	July 20, 1934	Aug. 15	41	48.0	1 2½	40.96	36	18.75	0.1	5	23.85	
30	John Cronk	Greattew Princess Carrie 7th	1290	Aug. 18, 1934	Aug. 22	34	58.6	1 11½	34.41	26	27.25	—	7	34.25	H.C.
31	John Cronk	Bourneplace Dairymaid 3rd	1271	Nov. 17, 1933	Aug. 24	32	57.0	2 1½	27.22	16	33.50	—	7	40.50	
32	King's College Farms	Sizergh Primrose 4th	1319	Sept. 27, 1934	Sept. 3	22	27.9	10½	42.51	26	10.5	—	7	17.50	

BUTTER TESTS—SHORTHORNS—Continued.

No. in Catalogue	Exhibitor	Name of Animal	Live Weight lbs.	Date of Birth	Date of last Calf 1938.	No. of Days in Milk	Milk Yield lbs.	Butter Yield lbs. ozs.	Milk to lbs. Butter	Duration of Churning Mins.	No. of Points for Butter	No. of Points for Lactation Maximum 12	No. of Points for Quality Maximum 10	Total Number of Points	Awards
35	W. H. Vigus ...	Revels Alicia	1037	Oct. 5, 1935	July 13	74	50.7	1 10 3	30.33	25	26.75	3.4	7	37.15	H.C.
48	Cambridge University Farm	Cantab Star 13th ...	1415	Sept. 23, 1933	Aug. 30	26	64.1	1 12 3	35.67	18	28.75	—	5	33.75	
49	Chivers & Sons, Ltd. ...	Tulip 2nd ...	1364	May 11, 1933	Sept. 9	16	54.6	1 13	30.12	10	29.0	—	8	37.00	
50	F. Brazier ...	Fil Pail ...	1233	Unknown	Sept. 15	10	43.1	2 12	15.67	20	44.0	—	9	53.00	6th Prize
51	King's College Farms ...	Lady ...	1534	March, 1934	Sept. 12	13	68.8	2 14	23.93	15	46.0	—	9	55.00	2nd Prize
52	F. Russell Wood ...	Bendish Charm 24th ...	1406	Aug. 26, 1934	Aug. 24	32	50.8	2 1 1	24.26	12	33.5	—	9	42.50	H.C.
54	Chivers & Sons, Ltd. ...	Histon Ashleaf 13th ...	1432	July 14, 1932	June 13	104	48.2	1 10 1	29.38	20	26.25	6.4	7	39.65	
55	Chivers & Sons, Ltd. ...	Histon Dairymaid 92nd	1167	Sept. 17, 1934	June 7	110	42.9	2 9 1	16.64	28	41.25	7.0	6	54.25	4th Prize
56	Chivers & Sons, Ltd. ...	Histon Fanny 8th ...	1485	Dec. 3, 1930	Sept. 14	11	60.8	2 13 1	21.38	10	45.5	—	8	53.50	5th Prize

BUTTER TESTS—BRITISH FRIESIANS.

No. in Catalogue	Exhibitor	Name of Animal	Live Weight lbs.	Date of Birth	Date of last Calf 1938.	No. of Days in Milk	Milk Yield lbs.	Butter Yield lbs. ozs.	Ratio, viz. lbs. Milk to lbs. Butter	Min. Duration of Churning	No. of Points for Butter	No. of Points for Lactation 12	No. of Points for Quality 10	Total Number of Maximum	Awards
58	A. J. Creed ...	Royal Akke 19th ...	1552	Dec. 5, 1932	Aug. 18	38	88.5	3 4½	27.10	23	52.25	—	5	57.25	1st Prize
59	E. J. Chapman ...	Egginton Medema 4th ...	1324	Sept. 20, 1920	Aug. 8	48	79.6	2 13½	28.78	20	44.25	0.8	6	51.05	4th Prize
60	Lord Rayleigh's Farms	Terling Eclipse 32nd ...	1321	July 2, 1933	Aug. 2	54	80.4	2 14½	27.52	25	46.75	1.4	6	54.15	3rd Prize
63	Lord Rayleigh's Farms	Terling Colbana 17th ...	1231	Oct. 2, 1932	Sept. 2	23	77.3	2 9½	29.69	21	41.75	—	7	48.75	6th Prize
64	Runwell Hospital Farm	Denchworth Annie ...	1268	Nov. 10, 1932	Aug. 31	25	72.9	1 14½	38.24	21	30.50	—	9	39.50	—
65	Pinkney Park Estate Co., Ltd.	Hurdlesgrove Pel Betty ^{2nd} 1242	1242	Oct. 31, 1931	Sept. 12	13	73.5	2 15½	24.89	15	47.25	—	8	55.25	2nd Prize
66	Strutt & Parker (Farms) Ltd.	Lavenham Cactus 27th 1430	1430	Nov. 4, 1930	Aug. 18	38	90.1	2 0½	44.70	24	32.25	—	7	39.25	—
68	Strutt & Parker (Farms) Ltd.	Lavenham Annie 41st 1378	1378	July 28, 1933	Sept. 5	20	87.1	2 11½	31.85	16	43.75	—	6	49.75	5th Prize
74	J. M. Watt ...	Monkham Lucy 2nd ...	1210	June 25, 1933	June 10	107	69.1	Disqualified							
75	Lord Rayleigh's Farms	Terling Eclipse 34th ...	1238	Jan. 20, 1934	July 25	62	64.9	2 0	32.45	24	32.0	2.2	7	41.20	H.C.
78	Strutt & Parker (Farms) Ltd.	Lavenham Lilac 8th ...	1276	Mar. 30, 1934	Sept. 9	16	74.0	2 6½	30.95	18	38.25	—	7	45.25	H.C.
80	G. J. Caddley ...	Egham Thebna 10th ...	1317	Sept. 4, 1934	Aug. 17	39	83.2	2 7½	33.70	25	39.5	—	6	45.50	Reserve
81	J. M. Watt ...	Monkham Ruby ...	1249	Aug. 1, 1934	Aug. 25	31	69.4	1 11	41.13	22	27.0	—	6	33.00	—
86	Hodge Bros. ...	Findloch Jemima ...	1383	Feb. 16, 1935	Sept. 3	22	65.8	1 9½	41.69	30	25.25	—	6	31.25	—
89	Lord Rayleigh's Farms	Terling Dazzle 27th ...	1181	Dec. 4, 1935	Aug. 8	48	61.0	Disqualified							

BUTTER TESTS—AYRSHIRES.

No. in Catalogue	Exhibitor	Name of Animal	Live Weight lbs.	Date of Birth	Date of last Calf 1938.	No. of Days in Milk	Milk Yield lbs.	Butter Yield lbs. ozs.	Ratio, viz. lbs. Milk to lbs. Butter	Duration of (Churning)	No. of Points for Butter	No. of Points for Lactation	No. of Points for Quality	Total Number of Points	Awards
131	R. Barbour	Ancheugghbert Ena	1154	April 3, 1933	Sept. 11	14	55.5	2 10½	20.80	25	42.5	—	3	45.50	H.C.
132	J. Templeton	Rottenrow Kitty	1084	Mar. 27, 1932	Sept. 7	18	68.2	2 4½	20.90	26	36.5	—	4	40.50	Reserve
133	A. Cochran	Ehuhurst Kliva	1102	Jan. 1, 1932	Sept. 13	12	42.0	2 5½	17.80	10	37.75	—	9	46.75	Reserve
134	A. Cochran	Kilnendow Favourite	1322	Oct. 17, 1927	Sept. 4	21	50.3	1 15½	20.88	26	31.75	—	8	39.75	H.C.
137	R. Sillars & Son	Ickham Carol 6th	1203	June 2, 1932	Sept. 6	19	49.4	2 6½	20.66	14	38.25	—	8	46.25	H.C.
140	A. W. Montgomerie	Hill Duchess 16th	1129	Mar. 1, 1933	Sept. 8	17	64.8	2 10½	24.25	20	42.75	—	6	48.75	5th Prize
141	J. G. Lohar	Draffan Patricia 2nd	1204	Aug. 1, 1931	Aug. 5	51	59.7	1 11	34.42	13	27.0	1-1	7	35.10	3rd Prize
142	J. G. Lohar	Overlaw Tote	1206	Mar. 12, 1931	Sept. 15	10	62.9	2 14½	21.64	19	46.5	—	8	54.50	3rd Prize
145	J. R. P. Hedley	Brooks Snowdrop	1049	Oct. 8, 1932	Sept. 8	17	38.4	1 4½	20.97	30	20.5	—	6	26.50	2nd Prize
148	A. Watson	Barboigh Lillas 28th	1272	Dec. 14, 1933	Sept. 11	14	72.8	3 3½	22.51	16	51.75	—	7	58.75	4th Prize
149	D. Smith	Kilmaurs Matus	1075	Sept. 8, 1934	Sept. 8	17	59.3	2 12	21.56	17	44.0	—	6	50.00	H.C.
150	D. Smith	Kilmaurs Matus Ruth 2nd	1120	Dec. 2, 1934	Sept. 2	23	64.0	2 5½	27.31	20	37.5	—	5	42.50	H.C.
152	J. Bone	Sheepcotes Relish 3rd	1183	Sept. 14, 1934	Sept. 15	10	73.5	3 3	23.06	18	51.0	—	9	60.00	1st Prize
156	R. Barbour	Kilnallan Shet 8th	1076	May 29, 1934	Sept. 14	11	56.3	2 1½	26.69	25	33.75	—	8	41.75	H.C.
157	A. Murray	Kilfillan Stella	1025	Feb. 18, 1934	Aug. 21	35	54.8	2 7½	22.34	15	39.25	—	6	45.25	H.C.
159	W. M. Grierson	Gibson's Angela 6th	1074	Oct. 17, 1935	Aug. 7	49	62.6	1 14	33.39	27	30.0	0-9	4	34.00	H.C.
166	J. Bone	Sheepcotes Lady Love	1032	Jan. 21, 1936	Sept. 11	14	57.3	1-13	31.61	25	29.0	—	7	36.00	H.C.
167	J. Logan	Beauchamps Bun	1018	Nov. 8, 1935	June 8	109	50.6	1 14½	26.33	37	30.75	6-9	6	43.65	H.C.
169	H. Wylie	Minsted Bracelet	967	Oct. 8, 1936	Sept. 11	14	42.8	1 8½	27.67	18	24.75	—	7	31.75	H.C.

BUTTER TESTS—GUERNSEYS.

No. In Catalogue	Exhibitor	Name of Animal	Live Weight lbs.	Date of Birth	Date of last Calf	No. of Days in Milk	Milk Yield lbs.	Butter Yield lbs. ozs.	Ratio, viz., lbs. milk to lbs. butter	Duration of Churning Mins.	No. of Points for Butter	No. of Points for Lactation Maximum 12	No. of Points for Quality Maximum 10	Total Number of Points	Awards
173	Hon. A. E. Guinness	Bella's Cora 4th of Les Jefferies	1070	Mar. 25, 1932	Sept. 8	17	70.1	3 14½	17.95	12	62.5	—	10	72.50	1st Prize
174	S. R. Hicks	Roshna 3rd of Saus- marez Manor	1039	April 6, 1932	May 11	137	42.2	2 3½	19.16	20	35.25	9.7	9	53.95	3rd Prize
175	G. R. Cobb	Rosey of Goodstone 64th	1116	Sept. 16, 1932	Sept. 9	16	55.0	2 11½	20.11	15	43.75	—	10	53.75	4th Prize
176	Capt. H. J. Pilbrow	Lassie Darling of Mapleton	852	June 28, 1932	Aug. 23	33	58.3	1 10½	35.20	25	26.5	—	6	32.50	2nd Prize
177	E. H. Rose	Leweston La Belle 3rd	1179	Jan. 12, 1933	Aug. 19	37	58.5	2 12½	20.92	35	44.75	—	10	54.75	2nd Prize
179	A. T. Loyd	Columbine of Ivy Gates	1094	Sept. 29, 1931	Aug. 14	42	47.6	1 9	30.46	25	25.0	0.2	7	32.20	2nd Prize
181	Hon. A. E. Guinness	Chicks Primrose	1017	April 21, 1934	Aug. 24	32	48.4	1 11½	27.91	25	27.75	—	9	36.75	5th Prize
182	Hon. A. E. Guinness	Holmbury Ivy 3rd	891	Feb. 15, 1935	May 15	133	38.8	2 1½	18.07	25	33.25	9.3	9	51.55	5th Prize
183	S. R. Hicks	Ways Primula	1123	Feb. 7, 1935	July 30	57	52.9	1 13½	28.45	27	29.75	1.7	8	39.45	H.C.
184	Capt. H. J. Pilbrow	Mapleton Mervauld 5th	1171	June 29, 1934	July 1	86	38.5	1 4½	30.42	25	20.25	4.6	7	31.85	H.C.
185	Capt. H. J. Pilbrow	Moss Gay 6th of Mapleton	906	Aug. 6, 1934	June 16	101	41.7	1 5½	31.40	35	21.25	6.1	6	33.35	H.C.
186	D. R. Woosley	Primrose 3rd of La Croix	985	Feb. 1, 1934	July 9	78	53.1	2 1½	25.55	27	33.25	3.8	8	45.05	H.C.
187	H. A. Y. Dyson	Floss of Paylay	979	Aug. 2, 1934	July 12	75	48.0	1 9½	29.83	22	25.75	3.5	8	37.25	H.C.
188	H. A. Y. Dyson	Rex's Primrose of Avisford 3rd	1002	April 5, 1935	July 23	74	42.4	2 0	21.20	30	32.0	2.4	9	43.40	H.C.
189	Hon. A. E. Guinness	Holmbury Bella's Cora	870	Aug. 15, 1935	April 30	148	41.0	1 14	21.87	25	30.0	10.8	9	49.80	Reserve
191	J. Brooke	Clopton Rose	899	Jan. 12, 1936	May 4	144	33.8	1 4½	26.06	25	20.75	10.4	8	39.15	H.C.
193	H. E. Crawford	Esvelle Duchess 6th	899	Jan. 27, 1936	July 7	80	40.1	1 5½	29.50	36	21.75	4.0	7	32.75	H.C.
194	H. A. Y. Dyson	Cuckoofield Edith	921	Feb. 14, 1936	June 21	96	41.1	1 14½	21.39	25	30.75	5.6	7	44.35	H.C.
197	Mrs. A. Gilbey	Amber Rubina	858	Dec. 5, 1935	July 10	77	38.7	1 5½	29.14	22	21.25	3.7	8	32.95	H.C.

BUTTER TESTS—JERSEYS.

No. in Catalogue	Exhibitor	Name of Animal	Live Weight lbs.	Date of Birth	Date of last Calf 1933.	No. of Days in Milk	Milk Yield lbs.	Butter Yield lbs. ozs.	Ratio, viz., lbs. Milk to lbs. Butter	Duration of Churning Mins.	No. of Points for Butter	No. of Points for Lactation Maximum 12	No. of Points for Quality Maximum 10	Total Number of Points	Awards
198	Ovaline Dairy Farm ...	Queen's Dream Lady ...	939	Feb. 25, 1931	May 31	117	49.3	2 8½	19.36	27	40.75	7.7	8	56.45	6th Prize
199	Ovaline Dairy Farm ...	Playmate of Oaklands	907	May 17, 1929	Aug. 27	29	46.9	2 3½	21.14	16	35.5	—	9	44.50	H.C.
200	Ovaline Dairy Farm ...	La Seute's Lady	886	Feb. 19, 1933	July 28	59	44.7	1 13½	24.45	18	29.25	1.9	8	39.15	3rd Prize
201	H. S. Mountaln ...	Groombridge Thrips Draconis	866	June 25, 1932	April 7	171	49.1	2 9	19.16	23	41.0	12.0	8	61.00	3rd Prize
202	H. S. Mountaln ...	Groombridge Recorder's Bella	842	May 17, 1933	Aug. 6	50	58.9	2 15½	19.94	12	47.25	1.0	9	57.25	5th Prize
204	Mrs. L. Corbett ...	Hockley Fern ...	885	July 15, 1931	July 4	83	48.0	2 14½	16.61	17	46.25	4.3	9	59.55	4th Prize
205	Mrs. L. Corbett ...	Hockley Heather ...	865	Aug. 30, 1932	Aug. 7	49	49.0	2 6	20.63	29	38.0	0.9	9	47.90	H.C.
208	Sir J. B. Lloyd ...	Royalist's Spotted Beauty	884	Oct. 30, 1932	June 3	114	45.3	2 3	20.71	25	35.0	7.4	8	50.40	H.C.
209	Sir J. B. Lloyd ...	Puck ...	942	Feb. 9, 1933	July 9	79	43.6	2 10½	16.32	24	42.75	3.9	9	55.65	Reserve
212	W. E. Press ...	Ronald's Royal Dream	730	June 10, 1930	April 24	154	41.5	1 13½	22.51	20	29.5	11.4	9	49.00	H.C.
213	Mrs. G. J. Caddey ...	Cambride Elfa 2nd	955	Nov. 10, 1930	Aug. 6	50	56.1	2 8½	22.16	33	40.5	1.0	8	49.50	H.C.
214	Mrs. H. I. Pitman ...	Bryne ...	873	Feb. 17, 1932	June 8	109	51.4	2 5	22.23	35	37.0	6.9	8	51.90	H.C.
215	Mrs. H. I. Pitman ...	Robin's Spotted Daisy	727	June 24, 1933	Aug. 28	28	51.9	2 9	20.25	20	41.0	—	8	49.00	H.C.
216	Lord Farington ...	Madcap ...	840	Sept. 3, 1931	June 9	108	59.3	2 8	23.72	28	40.0	6.8	9	55.80	7th Prize
218	G. McWilliam ...	Bollhayes Zelta's Queen	913	Mar. 17, 1931	April 3	175	38.4	2 2½	17.68	50	34.75	12.0	9	55.75	8th Prize
221	Dr. R. W. Wheldon ...	Silver Crown 31st	786	April 25, 1933	Feb. 1	236	30.2	1 4½	23.57	24	20.5	12.0	6	38.50	
223	Mrs. R. M. Foot ...	Whitehall Majestic Bess	914	Nov. 14, 1931	Aug. 31	25	44.7	2 11½	16.44	17	43.5	—	8	51.50	H.C.

BUTTER TESTS—JERSEYS—Continued.

No. in Catalogue	Exhibitor	Name of Animal	Live Weight lbs.	Date of Birth	Date of last Calf 1938.	No. of Days in Milk	Milk Yield lbs.	Butter Yield lbs. ozs.	Ratio, viz., lbs. Milk to lbs. Butter	Duration of (Burning)	No. of Points for Butter	No. of Points for Lactation	No. of Points for Quality Maximum 10	Total Number of Points	Awards
224	Mrs. R. M. Foot	...	716	July 31, 1932	May 19	129	43.7	1 15½	22.20	25	31.5	8.9	8	48.40	H.C.
226	Mrs. A. M. Hall	...	857	April 27, 1930	Mar. 25	184	36.8	1 12½	20.60	15	28.5	12.0	8	48.50	H.C.
227	G. N. and Miss D. Charrington	Hot Belle	744	Mar. 15, 1933	July 7	80	59.4	3 4	18.28	28	52.0	4.0	8	64.00	2nd Prize
228	G. N. and Miss D. Charrington	Semola 6th	814	Nov. 20, 1932	July 22	65	53.4	2 10½	19.99	40	42.75	2.5	8	53.25	H.C.
229	J. W. McCallum	Pearceclands Eileen 10th	1077	July 2, 1931	Aug. 30	26	75.5	3 11½	20.31	13	50.5	—	8	67.50	1st Prize
230	Miss G. M. Yule	Sans Gene's Lutece	905	July 6, 1929	Jan. 26	242	40.3	2 1½	19.39	15	33.25	12.0	9	54.25	H.C.
231	Ovaltine Dairy Farm	Peggy Girl	851	Nov. 11, 1933	June 6	111	31.5	1 11½	18.33	16	27.5	7.1	9	43.00	H.C.
234	Capt. A. S. Lockwood	Normanby Sweep's Claudette	787	June 5, 1934	Aug. 27	29	48.8	2 4	21.69	15	30.0	—	8	44.00	H.C.
235	Mrs. H. Hawkins	Arkona's Rosy	724	May 29, 1934	Aug. 19	37	49.6	2 6½	20.75	20	38.25	—	9	47.25	H.C.
237	G. McWilliam	Larkspur	822	Oct. 26, 1934	May 16	132	39.6	2 1½	19.06	28	33.25	9.2	9	51.45	H.C.
242	Dr. R. W. Wheldon	Moors Maltonia	699	July 7, 1935	Aug. 30	26	38.9	1 10	23.94	31	26.0	—	6	32.00	—
244	Mrs. A. M. Hall	Delightful Daffodil	947	Oct. 19, 1934	Aug. 23	33	40.8	2 3½	18.29	20	35.25	—	8	43.25	H.C.
246	J. W. McCallum	Hauteville Orange	957	Aug. 12, 1933	April 3	175	35.8	1 14½	18.78	17	30.5	12.0	8	50.50	H.C.
247	J. W. McCallum	Henbury Primrose 71st	810	Feb. 18, 1934	June 6	111	45.8	2 7½	18.67	18	39.25	7.1	7	53.35	H.C.
249	Miss G. M. Yule	Lucky Baby Girl	927	Dec. 6, 1933	Aug. 29	27	47.3	2 0½	23.11	19	32.75	—	7	39.75	H.C.
250	Miss G. M. Yule	The Poplar's Pride Girl	859	June 4, 1934	June 25	92	40.8	2 3½	18.39	16	35.5	5.2	8	48.70	H.C.
257	Ladies C. Ryder and A. Anson	Knowie Foxglove	755	April 24, 1936	Aug. 10	46	42.5	1 8½	27.76	20	24.5	0.6	9	34.10	H.C.

BUTTER TESTS—JERSEYS—Continued.

No. in Catalogue	Exhibitor	Name of Animal	Live Weight lbs.	Date of Birth	Date of last Calf 1938.	No. of Days in Milk	Milk Yield lbs.	Butter Yield lbs. ozs.	Ratio, viz., lbs. Milk to lbs. Butter	Mins. Duration of Churning	No. of Points For Butter	No. of Points For Lactation	No. of Points For Quality	Total Number of Points	Awards
259	W. E. Press ...	Wolvers Bess 2nd ...	670	July 28, 1936	Aug. 25	31	36.9	1 11½	21.28	13	27.75	—	2	35.75	H.C.
263	Mrs. H. Hawkins ...	Everdon Pioneer's Beauty	733	Aug. 30, 1936	Aug. 18	38	35.6	1 7½	24.24	23	23.5	—	2	31.50	H.C.
268	Dr. R. W. Wheldon ...	Girlish Lady Bunbury	694	July 1, 1936	Sept. 12	13	24.2	1 6	17.60	25	22.0	—	2	30.00	H.C.
269	Mrs. R. M. Foot ...	White Hill Dainty Bess	704	Feb. 5, 1936	July 22	65	40.8	1 13½	22.01	33	29.75	2.5	2	40.25	H.C.
270	Mrs. R. M. Foot ...	White Hill Dainty Primrose	689	Mar. 18, 1936	July 22	65	21.2	1 0½	20.56	18	16.5	2.5	2	27.00	H.C.
272	Mrs. A. M. Hall ...	Feterita 15th ...	730	April 20, 1936	July 21	66	32.4	1 4½	25.29	20	20.5	2.6	2	31.10	H.C.
273	Mrs. A. M. Hall ...	Galliaule ...	697	April 25, 1936	Aug. 15	41	25.8	0 15½	27.07	10	15.25	0.1	2	23.35	H.C.
275	Lady Hervey Bathurst	La Chasserie Nuriel ...	809	Mar. 10, 1936	July 1	86	36.4	1 10½	22.19	25	26.25	4.6	9	39.85	H.C.

BUTTER TESTS—OTHER BREEDS.

No. in Catalogue	Exhibitor	Name of Animal	Live Weight lbs.	Date of Birth	Date of last Calf 1938.	No. of Days in Milk	Milk Yield lbs.	Butter Yield lbs ozs	Ratio, viz. lbs. Milk to lbs. Butter	Duration of Churning Mins.	No. of Pounds for Butter	No. of Points for Lactation Maximum 12	No. of Points for Quality Maximum 10	Total Number of Points	Awards
SOUTH DEVON.															
98	W. Hunt	Diptford Downs Milkmaid 13th	1039	April 13, 1930	Aug. 29	27	51.1	1 14½	26.59	18	30.75	—	8	38.75	Reserve
100	J. T. Dennis	Winsor Snowdrop 5th	1578	Mar. 19, 1932	Mar. 12	197	37.8	1 11½	22.19	38	27.25	12.0	8	47.25	H.C.
101	G. Wills	Ryton Milkmaid 6th	1029	Sept. 20, 1932	Jan. 10	258	28.9	1 7	20.10	25	23.0	12.0	7	42.00	H.C.
102	G. Wills	Berry Hilda 9th	1583	Sept. 25, 1933	Aug. 20	36	49.4	1 14½	25.91	25	30.5	—	10	40.5	1st Prize
105	J. T. Dennis	Winsor Alma 2nd	1316	Sept. 20, 1933	Sept. 9	16	58.6	3 0½	10.43	18	48.25	—	10	58.25	2nd Prize
106	V. Bunday	Westerland Anne	1431	Dec. 14, 1933	Aug. 30	26	63.5	2 7½	25.72	25	30.5	—	10	40.5	2nd Prize
RED POLL.															
107	Mrs. W. Springeour	Wissett Nonsuch	1322	June 16, 1928	Sept. 8	17	52.1	2 0½	25.85	30	32.25	—	7	39.25	Reserve
108	Mrs. M. L. Griffith	Diss Mermaid	1332	Feb. 22, 1932	Aug. 10	37	57.8	1 1	54.40	48	17.0	—	6	23.00	Reserve
110	Stuart Paul	Kirton Fantasy	1288	Aug. 15, 1932	April 3	173	53.5	1 15	27.61	25	31.0	12.0	5	48.00	2nd Prize
111	Mrs. R. M. Foot	White Hill Cannary Blossom	1189	July 13, 1933	May 8	140	51.2	2 1½	24.64	26	33.25	10.0	6	40.25	1st Prize
112	Mrs. R. M. Foot	White Hill Arrogant Lily	1066	June 24, 1932	Aug. 30	26	61.2	2 12½	22.13	38	44.25	—	8	52.25	2nd Prize
115	Mrs. H. D. Lewis	Cleeter Queen Rita	1076	Nov. 6, 1932	Aug. 8	48	49.3	1 10½	30.05	19	26.25	0.8	6	33.05	2nd Prize
116	Mrs. T. R. Lindsay	Downfield Griselda	1365	Aug. 19, 1929	Aug. 24	32	68.1	1 11½	30.62	25	27.5	—	5	32.50	2nd Prize
117	Lady Dennyman, C.B.E.	Gleevering Slakin	1446	Sept. 21, 1931	Sept. 3	22	63.1	1 10	38.83	17	26.0	—	2	28.00	2nd Prize
119	Mrs. M. L. Griffith	Hallingbury African Morn	1218	Dec. 25, 1933	Aug. 23	33	40.5	1 6½	28.80	27	22.5	—	6	28.50	2nd Prize

BUTTER TESTS—OTHER BREEDS—Continued.

No. in Catalogue	Exhibitor	Name of Animal	Live Weight lbs.	Date of Birth	Date of last Calf 1938.	No. of Days in Milk	Milk Yield lbs.	Butter Yield lbs. ozs.	Ratio, viz., lbs. Milk to lbs. Butter	Duration of (burning) Mins.	No. of Points for Butter	No. of Points for Lactation Maximum 12	No. of Points for Quality Maximum 10	Total Number of Points	Awards
RED POLL— <i>contd.</i>															
122	Stuart Paul ...	Kirton Faithless ...	1213	Aug. 23, 1934	Aug. 13	43	44.8	1 5 $\frac{3}{4}$	32.96	32	21.75	0.3	6	28.05	2nd Prize
127	Mrs. H. D. Lewis ...	Combwell Mince 2nd ...	1345	Jan. 1., 1936	Aug. 15	41	25.1	0 14 $\frac{3}{4}$	27.23	20	14.75	0.1	6	20.85	1st Prize
DEXTER.															
276	Lady Loder ...	Crocus ...	657	June 4, 1932	May 25	123	30.8	1 5 $\frac{3}{4}$	22.66	22	21.75	8.3	7	37.05	2nd Prize
277	Lady Loder ...	Grinstead Trixie 4th ...	660	Aug. 3, 1934	Aug. 29	27	39.7	1 15 $\frac{3}{4}$	20.01	17	31.75	—	2	39.75	1st Prize
278	Miss N. M. Lloyd ...	Pentre Holyrn Periwinkle 2nd ...	663	Jan. 17, 1932	Sept. 15	10	19.2	1 12 $\frac{1}{4}$	10.78	9	28.5	—	2	30.50	Reserve
279	Mrs. E. Carlos Clarke ...	Grinstead Iollie 4th ...	625	July 26, 1933	June 3	114	36.1	1 1	33.98	45	17.0	7.4	2	32.40	

POULTRY SECTION—DAIRY SHOW, 1938.

BY W. J. GOLDING.

Our Diamond Jubilee Show, in its new home at Earls Court, was rightly pronounced the biggest and best that has so far been held, and, if it had not been for the tragic circumstances due to the crisis, it would have undoubtedly broken all records, both financially and otherwise. Speaking for this section of the Show the layout was grand, and those who remember the intense—but always friendly—jostling that occurred in the galleries at the Agricultural Hall found themselves walking comfortably about in the aisles of this great building. Unfortunately, entries were not so numerous, but this can be accounted for owing to the earlier date on which the Show was held, but the change of date, now established, will allow breeders to prepare, and it is anticipated that the entry will get back to that of former Shows; moreover, that the Show of 1939 is to commence on the Tuesday will be welcomed and much appreciated by exhibitors.

The arrangements, under the supervision of Mr. J. H. Brown as Chief Steward, were excellently carried out, but one sadly missed that veteran assistant steward, Mr. E. J. Voss, who has carried out this work so ably for 40 odd years without a break; his retirement, so richly deserved, is none the less regrettable.

This section was again held under Poultry Club Rules, and several additional Challenge Cups in consequence were available for competition. For the first time for many years the classifications reverted back and deleted separate classes for utility poultry, in spite of these classes being so well supported at former Dairy Shows; the Committee rightly came into line with other Shows and stopped duplication—all to the good in my humble opinion. Taken collectively the quality was well up to Dairy Show standard, and all the breed champions were in competition for the "Isherwood" Perpetual Challenge Trophy for the best bird in the Live Poultry classes; once again this supreme honour went to an Indian Game cockerel exhibited by Mr. W. E. Platten, and this fine exhibit also secured the Poultry Club Challenge Cup for the best cock or cockerel exhibited by a member; the runner-up was Mr. R. S. Hirst's Black-Red Modern Game Bantam cockerel. The judges had a very difficult task to separate these two exhibits. The "Morrison" Challenge Trophy, for the best Utility Fowl in the Show, was awarded for the second year in succession to the Homelea Poultry Farm, Ltd., for their beautifully shown White Wyandotte cockerel; the reserve for this special was Mrs. R. Moore's very typical Rhode Island Red pullet.

EGGS AND TABLE POULTRY.

English Eggs, exhibited in one dozen lots, came up well for entries, but in quality left much to be desired; exhibitors must remember freshness counts to a very large extent, and, in the judge's opinion, this and other essentials were terribly lacking. On the other hand, Dominion Eggs, for quality, packing and grading, were excellent.

Table Poultry Pair classes were well handled by Mr. J. A. Smith, who consistently went for quality in preference to mere weight; the classes for any other variety, pure bred other than Sussex, strangely enough, were cancelled, which unfortunately left out such good breeds as Orpingtons, Dorkings, Marans, North Holland Blues, &c., which was regrettable, and breeders of these varieties should rectify this omission another year. Mrs. Washington Singer won the Medal with a pair of superb quality Sussex cockerels, the matching and finish of which left nothing to be desired.

The Market Packs, judged by Messrs. W. Fenn and A. P. F. Grant, were very well-filled classes, and exceptionally uniform for quality throughout; the Championship went for the second time in succession to British Poultry Development, who were also most successful in winning both first and second prizes in each of the three classes, an achievement to be proud of.

The Pack class for Ducklings, provided for the first time this year, was an excellent one, and the Medal-winning six, exhibited by Mr. A. B. Tice, were outstanding for quality and finish.

Innovations this year, which caused widespread interest, were the Plucking and Trussing Competitions, carried out daily, and the crowded attendance at each of the competitions plainly showed the keenness and enthusiasm of the public.

LIVE POULTRY.

This year the breeding pens commenced the classification and made a very representative display; they somehow lose the attractiveness by being penned singly, for the first time. The Homelea Poultry Farm, Ltd., again secured the "Quill" Challenge Trophy for the best trio, with their splendid pen of Light Sussex, well matched, and shown to the minute. Next came classes for pairs of live birds, mated to produce good table fowls, but these did not attract as many entries as one would have expected, and it is doubtful if the experiment will be repeated.

Quite a good display of Wyandottes were on view, the White classes, as usual, being the biggest, and the White cockerel exhibited by the Homelea Poultry Farm, Ltd., was

adjudged the best in the breed. Sussex, as to be expected, came up well in numbers, the Light variety predominating, and Messrs. French & Meikle's Light pullet was awarded the Breed Championship. Orpingtons, apart from two well-filled Buff classes, were poorly represented. The Special for the best Orpington went to Mr. J. D. Kay's Blue pullet. Plymouth Rocks always turn up well at the Dairy Show, and made a good display; they were well handled by the son of that veteran judge, Richard Garlick, now in his 83rd year; the Medal was awarded to Mr. J. Fawcett's Barred pullet. Leghorns numerically were poor, but what was lacking in numbers was made up in quality, and the best in the section proved to be the White pullet exhibited by Mr. W. Borthwick, shown at her best and an outstanding winner. In Rhode Island Reds, although I have seen better-filled classes, I have rarely seen better all-round quality; the clean sweep of the prizes made by Mrs. R. Moore's exhibits must be a record for the breed. Indian Game had two well-filled classes and, as previously mentioned, the Champion bird of the Show was found in this grand old breed. Old English Game, on the other hand, were nothing like so numerous as usual and contained nothing outstanding as regards quality.

Welsummers, with Mr. H. Pickford making his debut as a judge at the Dairy Show, were quite good classes, in fact, the display was as good as has been seen anywhere of recent times.

The Selling Classes were good, both in numbers and quality, but sales were conspicuous by their absence, never has there been a Dairy Show with less sales taking place, but with the tense crisis overhanging the Show, everyone seemed to lose confidence. Ten pounds was the top price paid at the auction for Mr. Leyson's winning White Sussex cockerel.

The usual good collection of Bantams was to be seen, with some outstanding exhibits amongst them. Selecting a few at random, mention must be made of Mr. R. S. Hirst's Modern Game Black-Red cockerel, the winning Indian Game cockerel shown by Mr. A. Chynoweth, and the Black Wyandottes exhibited by Mr. A. Johnson.

In the Duck section all classes stood with the exception of the two for Buff Orpingtons; Indian Runners came up well, and Mr. M. Smith's Fawn duck was awarded the Medal on the vote of a referee. Some first-class Aylesburys were penned. The Brecon or Buff variety was the best feature of the Geese section, but it was the winning Emden gander, exhibited by Mr. A. H. Fox-Brockbank, that secured the Medal—quite an outstanding winner. The Buff and Blue Turkey classes were cancelled, but the remainder made a very good show, and the Bronze stag, exhibited by Captain B. T. Dickenson, deservedly won the Medal.

Other challenge trophies in the Poultry Section were awarded as follows:—

The Poultry Club Cup for the best male fowl or bantam to Mrs. R. Moore for Rhode Island Red Pullet, Pen 579.

The Marx Memorial Cup for the best bird of a French breed to Mrs. C. E. Parke for White Bresse, Pen 412.

The Russel Bowl for the best Light Sussex to French & Meikle, Pen 175.

The Coghurst Bowl for the best White Sussex to T. Leyson, Pen 185.

The Golding Cup for the best Buff Orpington to W. J. Golding, Pen 247.

The Colonel Harold Brown Cup for the best Blue Orpington to J. D. Kay, Pen 261.

The McComb Cup for the best Double Laced or Partridge Barnevelder to J. Burdett, Pen 356.

The Dallinghoo Hall Cup for the best Silver Campine Pullet to W. A. Slocock, Pen 402.

The Larret Duke Cup for the best Gold Campine Pullet to W. A. Slocock, Pen 406.

The Page Cup for the best Rose-Comb Rhode Island Red to H. Hill, Pen 586.

The Elce Cup for the best Bronze Turkey Cockerel to Capt. B. T. Dickenson, Pen 1615.

The Wilson & Horsfall Cup for the best Norfolk Black Turkey Cockerel to J. P. Ince, Pen 1634.

The Elce Cup for the best Norfolk Black Turkey Pullet to J. P. Ince, Pen 1637.

The Butterley Bowl for the best White Turkey to Capt. B. T. Dickenson, Pen 1647.

Silver Spoons, offered by the Association to celebrate the Diamond Jubilee Dairy Show, for the best birds in classes where twelve or more entries were present, were awarded as under:—

Wyandottes.—Homelea Poultry Farm, Ltd., G. Maidment.
Sussex.—Highland Investment Co., Ltd., French & Meikle
(3).

Croad Langshans.—Miss B. F. Reeves.

Rhode Island Reds.—Mrs. R. Moore (3), G. A. Gardner,
W. B. Buchanan.

Old English Game.—Hearn Bros.

Welsummers.—H. Snowden.

Leghorns.—J. Burnett.

Modern Game Bantams.—R. S. Hirst (2), Cathcart Bros.

Old English Game Bantams.—J. G. Blair.

Variety Bantams.—Miss H. K. O. Walker.

Geese.—R. Llewellyn (2).

PIGEON SECTION—DAIRY SHOW, 1938.

By W. S. BROCKLEHURST, J.P.

The Sixtieth Show of the British Dairy Farmers' Association was held on 26th, 27th, 28th and 29th September, 1938, at Earls Court, London.

The pigeon exhibits having to be penned on the night of Friday, 23rd September, and judged on the following day, necessitated the birds being in their pens for seven days at the Show, and, with the journey to and from Earls Court of at least another two days, they were away from their lofts at least nine to ten days. Further, as the Show was held a month earlier, it was no surprise that the entries were considerably lower this year; there were only 1,628 in 188 classes as compared with 2,538 in 239 classes last year. The month of September is also too early for adult birds to be shown; owing to their not being through the moult would account for the drop in the entries in the adult classes. In view of the amount of space available at Earls Court the birds were staged in single tiers and of a correct height, which was much appreciated by all exhibitors who were present.

The artificial light made the judging somewhat difficult and occupied more time. Most of the judges report that the quality was good throughout most classes, but many breeds were not through the moult.

It was noticed towards the end of the Show that many of the young birds were showing signs of strain of being penned for a long period under Show conditions, and exhibitors welcome the announcement that next year's Show will commence on the Tuesday and terminate on the Friday, which may be the means of a larger entry.

The winners of the British Dairy Farmers' Association's Trophies and Gold Medal were pigeons of outstanding merit and a great credit to their respective breeders and owners who are to be congratulated on their achievements.

Dr. J. S. Peebles very kindly acted as the judge of these trophies and spent a very busy morning selecting the winners from the nominated birds before him.

To celebrate the Diamond Jubilee Dairy Show the Council of the British Dairy Farmers' Association offered a Silver Spoon for the best bird in each class where 12 or more entries were

present, with the result that 34 Spoons were awarded as under:—

Pigmy Pouters.—H. N. Leighton and F. W. Miller (2).

Carriers.—A. J. Warwick.

Variety Pigeons.—Mrs. B. Seward.

Dragoons.—T. Wilkinson, W. L. Wilkinson (2), Tattersall & Whitehead (2) and J. W. Gambrill.

Modenas.—W. S. & R. W. Brocklehurst (3) and E. P. Morton.

Long-Faced Tumblers.—L. W. Goad, Barraclough & Taylor and W. E. Pollard.

Magpies.—W. Machin & Son and H. Clemmit.

Holle Croppers.—A. Allum.

Antwerp Smerles.—W. J. Rayner and J. Durham.

Flying Tipplers.—J. Ofield and Rook & Nichols.

Show Homers.—M. Dearnley.

Exhibition Homers.—J. J. Mackay.

Racing Pigeons.—J. Walker (4), R. J. Worton, S. Arrow-smith and C. R. Snow.

WINNERS OF TROPHIES AND GOLD MEDAL.

The B.D.F.A. Gold Medal for the best pigeon in the Show to Miss C. E. Fair's African Owl, Pen 1184. Reserve, F. H. Jarvis's Fantail, Pen 26.

The Jones Memorial Trophy for the best adult pigeon to W. S. & R. W. Brocklehurst's Blue Schietti Modena Hen, Pen 563. Reserve to W. Machin & Son's Black Magpie Cock, Pen 1042.

The Esquilant Trophy for the best Dragoon, Antwerp, Show Homer or Exhibition Homer to W. L. Wilkinson's Red Chequer Dragoon Cock, Pen 344. Reserve to J. Brooke's Show Homer Cock, Pen 1310.

The Fulton Trophy for the best Pouter, Pigmy Pouter, Norwich Cropper or Holle Cropper to Dr. H. Y. Mansfield's White Pigmy Pouter Cock, Pen 103. Reserve to Mr. J. Taylor's Norwich Cropper Cock, Pen 171.

The Doctor C. H. Tattersall Trophy for the best Dragoon to W. L. Wilkinson, Pen 344. Reserve to T. Wilkinson, Pen 283.

The Alfred Bates Cup for the best Fantail (any age) to F. H. Jarvis, Pen 26. Reserve to F. H. Jarvis, Pen 20.

The Captain St. John Hornby Bowl for the best adult Pigmy Pouter to W. K. Brown, Pen 66. Reserve to Dr. H. Y. Mansfield, Pen 112.

The George Cotton Cup for the best Dragoon Cock to W. L. Wilkinson, Pen 344. Reserve to T. Wilkinson, Pen 283.

The George Cotton Cup for the best Dragoon Hen to W. L. Wilkinson, Pen 352. Reserve to W. Proctor Smith, Pen 384.

The Hewitt Cup for the best White Dragoon to Hollebhone & Spencer, Pen 442. Reserve for Hollebhone & Spencer, Pen 457.

The Scatliff Memorial Trophy for the best Turbit or Turbiteen to J. L. Sears, Pen 772. Reserve to Barraclough & Taylor, Pen 787.

The Oriental Frill Club Trophy for the best Oriental Frill to J. L. Sears, Pen 734. Reserve to A. J. Parker, Pen 743.

The Edwards Trophy for the best Self or Barred Tumbler to Barraclough & Taylor, Pen 904. Reserve to W. E. Horsfall, Pen 920.

The Frith Memorial Cup for the best Long-faced Mottle or Rosewing Tumbler. Not awarded.

The Gatty Cup for the best English Owl to W. Prince Smith, Pen 1159. Reserve to W. Prince Smith, Pen 1165.

The Gatty Cup for the best African Owl to Miss C. E. Fair, Pen 1184. Reserve to J. E. & W. Watmough.

The Lovell Trophy for the best Show Homer (any age) to J. Brooke, Pen 1288. Reserve to J. Brooke, Pen 1310.

The Osman Cup for the best Racing Pigeon (any age) to R. J. Worton, Pen 1463. Reserve to R. J. Worton, Pen 1429.

The above Trophies are for birds bred in the current year except where otherwise stated.

The Challenge Certificates offered by the National Pigeon Association and Marking Conference were awarded as follows:—

Fantails.—W. Bardell.

Pigmy Pouters.—W. K. Brown, Dr. H. Y. Mansfield and F. W. Miller.

Norwich Croppers.—H. Bushell.

Carriers.—J. B. Cooper.

Dragoons.—E. H. Birks, W. L. Wilkinson, W. Proctor Smith and Tattersall & Whitehead.

Modenas.—W. S. & R. W. Brocklehurst (2).

Archangels.—J. R. Dovener.

Oriental Frills.—J. L. Sears and A. J. Parker.

Nuns.—N. R. Steel.

Short-Faced Tumblers.—G. A. Frith and F. J. Toghill.

Long-Faced Tumblers.—W. R. Atherton and A. W. Dodd.

Maggies.—W. Machin & Son (2).

Holle Croppers.—A. Allum.

Polish Lynx.—T. B. Willmetts.

Show Homers.—J. Brooke.

Runts.—J. W. Lett.

HORTICULTURAL SECTION.

By G. C. SANKEY.

For the first time in the history of the British Dairy Farmers' Association a Horticultural section was staged as an added attraction at the Diamond Jubilee Show. The new section was well supported and attracted a large number of magnificent and interesting exhibits.

A sight that will linger long in the memory of many was the pageant and riot of colour of the flowers stretching as far as

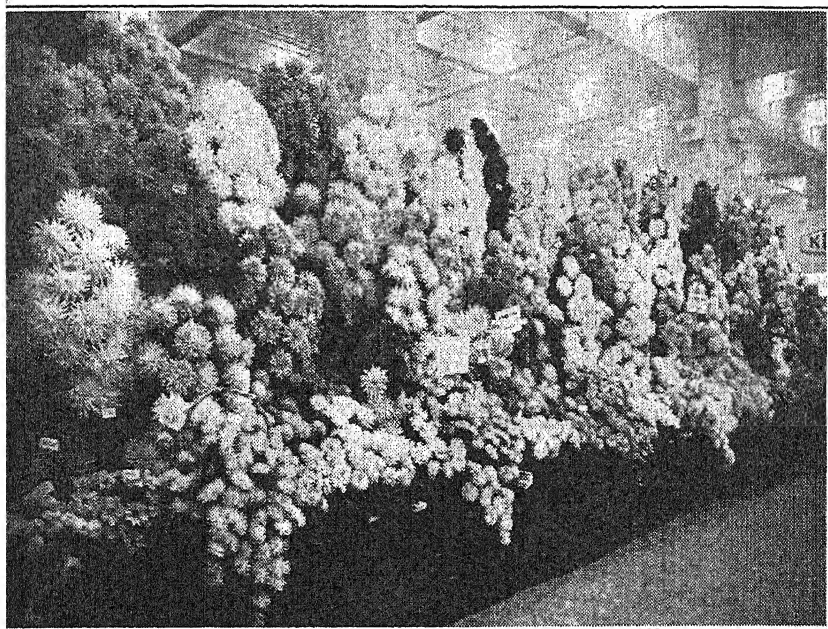


Photo by "Farmer and Stockbreeder."

the eye could see, to the right, to the left, some banked to the height of 15 feet, silent, stately tributes to the skill of the cultivator and exhibitor.

The brilliant colourings of some of the dahlias, as seen on Mr. Stuart Ogg's Gold Medal exhibit, were enhanced by the artificial lighting, particularly the red, orange and yellow shades, and the same effect was noticeable on Messrs. Brown & Such's Silver Medal exhibit of dahlias; the same outstanding brilliance was noticed on the three-sided exhibit that gained a Bronze Medal award for Messrs. Carter Page & Co., Ltd.

A Gold Medal was awarded to a magnificent exhibit of ornamental shrubs, bowls of hardy flowers, and vases of gladioli arranged to advantage and contributed by Messrs. John Waterer, Sons & Crisp, Ltd. A fine display of carnations and dianthus *Allwoodii* was staged by Messrs. Allwood Bros., and was awarded a Silver Medal by the judges. Messrs. Blackmore & Langdon staged a magnificent collection of begonias together with delphiniums, phloxes and *scabiosa caucasica*, the whole being given a Gold Medal.

Messrs. W. E. Th. Ingwersen, Ltd., gained a Bronze Medal for a large table rock garden containing drifts of *gentiana sino-ornate*, their rich blue being thrown into relief by a background of dwarf conifers, while other rare alpine added to the attractiveness of the general layout.

A riot of autumn colour was seen in the collection of shrubs shown by Messrs. L. H. Russell, Ltd., in their Silver Medal exhibit.

A very colourful display of roses in a great number of varieties, arranged in bowls, attracted attention to Messrs. C. Gregory & Son's, Ltd., exhibit, and gained for them a Bronze Medal.

The numerous other exhibits attracted great interest and added to the brilliance of the section. Chrysanthemums, roses, berried shrubs and alpine were present in great numbers as were planted rock gardens, while a collection of lilliums drew attention to their beauty by their fragrance. One stand was devoted to spring flowering bulbs, others specialised in showing dwarfed Japanese trees, specimens of topiary, complete gardens on pedestals, cacti and succulents. The soft amber-coloured lighting that illuminated a vast area of the exhibition hall had a strange effect on the colour of flowers, especially the blues and mauves of michaelmas daisies, as these appeared dull and lifeless.

Information on gardening subjects could be obtained from the stand of the "Gardeners' Chronicle," who displayed a fine collection of coloured transparencies and up-to-date gardening books. Those interested in artificial manures, peat and garden sundries were well catered for.

The Horticultural section afforded the connoisseur, amateur gardener and novice a great opportunity of seeing novelties and new varieties of plants and flowers and to discuss their merits, habits and cultivation with experts; while to the visitor the riot of beauty, fragrance and colour was but another attraction of this great show.

AWARD OF PRIZES, DAIRY SHOW, 1938.

TROPHIES AND SPECIAL PRIZES FOR DAIRY COWS AND HEIFERS IN MILK.

Open to all Breeds.

THE BRITISH DAIRY FARMERS' ASSOCIATION'S SUPREME INDIVIDUAL CHAMPIONSHIP CHALLENGE TROPHY, for the Cow gaining the greatest number of points on Inspection, in the Milking Trials (provided the quality of the milk analysed during the test does not fall below 3 per cent. fat, nor below 8.5 per cent. of non-fatty solids at any Milking), and in the Butter Test. Awarded to J. W. McCallum for Jersey Cow "Pearcelands Eileen 10th."

THE "BLEDISLOE" CHALLENGE TROPHY (presented by VISCOUNT BLEDISLOE, P.C., G.C.M.G., K.B.E.), for the best exhibit of good all-round Dairy Cows. Awarded to British Friesians.

THE "MORRISON" CHALLENGE TROPHY (presented by the late Major J. A. MORRISON, D.S.O.), for the Cow exhibited at three consecutive London Dairy Shows at which cattle was exhibited, gaining the greatest total number of points (at the three Shows) on Inspection, in the Milking Trials and Butter Tests. Awarded to J. W. McCallum for Jersey Cow "Pearcelands Eileen 10th."

THE "BARHAM" CHALLENGE CUP (presented by the late Mr. G. TITUS BARHAM, for the Cow gaining the greatest number of points in the Milking Trials. Awarded to Strutt & Parker (Farms), Ltd., for British Friesian Cow "Lavenham Annie 41st."

THE "SPENCER-STAPLETON" CHALLENGE CUP, value 100 Guineas (presented by Mr. J. GILLARD STAPLETON, Coronation year, 1937), will be awarded to the Owner of the Cow gaining the greatest number of points on Inspection, in Milking Trials and Butter Test. Awarded to Hon. A. E. Guinness for Guernsey Cow "Bella's Cora 4th of Les Jetteries."

THE "SHIRLEY" CHALLENGE CUP (presented by the late Mr. J. L. SHIRLEY), for the Cow giving the greatest average daily weight of milk in the Milking Trials, such milk to contain not less than 3 per cent. fat and 8.5 per cent. of non-fatty solids. Awarded to Strutt & Parker (Farms), Ltd., for British Friesian Cow "Lavenham Cactus 27th."

THE "BREEDERS" MILK CHALLENGE TROPHY (presented by Mrs. R. M. FOOT), for the Cow or Heifer entered in or eligible for the Herd Book of its Breed, obtaining in the Milking Trials the greatest number of points per 1,000 lbs. live weight for milk with lactation points added. Animals eligible to compete for this Trophy must have been bred by the owner, and must be stalled in the section for licensed cattle or have passed the tuberculin test on or before 1st August, 1937. Awarded to H. S. Mountain for Jersey Cow "Groombridge Recorder's Imogen."

THE NATIONAL MILK CHALLENGE CUP, for the Cow or Heifer, entered in or eligible for the Herd Book of its breed, obtaining in the Milking Trials the greatest number of points per 1,000 lbs. live weight for milk with lactation points added. Awarded to Mr. G. N. & Miss D. Charrington for Jersey Cow "Hot Belle."

THE NATIONAL BUTTER CHALLENGE CUP, for the Cow or Heifer, entered in or eligible for the Herd Book of its breed, obtaining in the Butter Tests the greatest number of points per 1,000 lbs. live weight for Butter with lactation points added. Awarded to Mr. G. N. and Miss D. Charrington for Jersey Cow "Hot Belle."

SPECIAL PRIZE OF £10 (offered by the late SIR ROBERT L. MOND, J.P.), for two animals, the Progeny of any particular Bull, gaining in the Milking Trials highest points above the Class Standard. Awarded to John Bone for "Sheepcotes Relish" and "Sheepcotes Lady Love," progeny of "Rottenrow Milkman" (Ayrshires).

Open only to Shorthorns.

THE "DESBOROUGH" CUP (presented by LORD DESBOROUGH, K.C., G.C.V.O.), for the Cow, exhibited in Classes 1 and 2, gaining the highest points in the Milking Trials. Awarded to W. J. Wheeler for "Frieth Tiny 4th."

THE "CALVERT" CHALLENGE CUP (presented by the late Mr. HORATIO CALVERT), for the best Pedigree Dairy Shorthorn Cow or Heifer upon Inspection only. Awarded to J. Barnes for "Whittingslow Podger."

THE "MELVIN" PERPETUAL CHALLENGE CUP (presented by SIR MARTIN MELVIN, BART.) for the Dairy Shorthorn Cow or Heifer entered in Coates' Herd Book or in the Grading Register, gaining the greatest number of points on Inspection, in the Milking Trials and Butter Tests. Animals eligible to compete for this Cup must have been bred by the Owner. Awarded to J. J. McMenemy for "Parkhouse Strawberry 16th."

THE "SHORTHORN" BUTTER CHALLENGE CUP (presented by MAJOR S. P. YATES), for the Shorthorn Cow or Heifer entered in Classes 1 to 5 complying with all the conditions of the Butter Tests. Awarded to W. J. Wheeler for "Frieth Tiny 4th."

THE "THORNTON" CHALLENGE CUP (presented by MESSRS. JOHN THORNTON & CO.), for the best Group of three Pedigree Dairy Shorthorn Cows and/or Heifers upon Inspection only. Awarded to Major G. Miller Mundy for "Knell's Elliot Fernleaf 2nd," "Redrice Craggs 3rd" and "Redrice Darling 10th."

THE CORONATION NON-PEDIGREE DAIRY SHORTHORN CHALLENGE CUP (presented by FRIENDS OF THE NON-PEDIGREE DAIRY SHORTHORNS), for the best Non-Pedigree Dairy Shorthorn Cow or Heifer on Inspection. Awarded to King's College Farms for "Lady."

EXTRA PRIZE OF £25 (offered by the Shorthorn Society of the United Kingdom of Great Britain and Ireland), for the Dairy Shorthorn Cow or Heifer, pedigree or entered in the Shorthorn Society's Grading Register, gaining most points on Inspection, in the Milking Trials and Butter Tests. Awarded to W. J. Wheeler for "Frieth Tiny 4th."

EXTRA PRIZE OF £10 (offered by the Shorthorn Society of the United Kingdom of Great Britain and Ireland), for the Cow exhibited in Class 4 and entered, or accepted for entry, in the Grading Registers of the Shorthorn Society gaining most points on Inspection and in the Milking Trials. Awarded to King's College Farms for "Lady."

Open only to British Friesians.

THE "THORNTON" CHALLENGE CUP (presented by MESSRS. JOHN THORNTON & CO.), for the best group of three Pedigree British Friesian Cows and/or Heifers upon Inspection only. Awarded to Strutt & Parker (Farms), Ltd., for "Lavenham Cactus 27th," "Lavenham Annie 41st" and "Lavenham Lilac 8th."

Open only to South Devons.

A SILVER CHALLENGE CUP (presented by the SOUTH DEVON HERD BOOK SOCIETY), for the Pedigree South Devon Cow gaining the greatest number of points on Inspection, in the Milking Trials and Butter Tests. Awarded to J. T. Dennis for "Winsor Alma 2nd."

Open only to Devons.

THE "BUSK" PERPETUAL CHALLENGE CUP (presented by Friends of the late WILLIAM GOULD BUSK of Wraxhall, Dorset), for the Devon Cow or Heifer gaining the greatest number of points on Inspection, in the Milking Trials, Butter Tests, and for the Milk Record for the 12 months ended 1st October, 1938. Not awarded.

Open only to Red Polls.

THE "THORNTON" PERPETUAL CHALLENGE CUP (presented by MESSRS. JOHN THORNTON & CO.), for the Red Poll Cow or Heifer gaining the greatest number of points on Inspection, in the Milking Trials and Butter Tests. Awarded to Stuart Paul for "Kirton Fantasy."

THE RED POLL CATTLE SOCIETY PRIZE of £30, to be divided equally as "dual-purpose" bonuses between those animals in Classes 15, 16 and 17, which, being prize winners on Inspection, also obtain prizes in the Milking Trials. Awarded to Mrs. Scrimgeour for "Wissett Nonsuch" and "Wissett Fantail"; Stuart Paul for "Kirton Fantasy," "Kirton Faithless" and "Kirton Selector"; Lady Denman for "Parham Minnehaha"; Mrs. M. L. Griffiths for "Hallingbury African Morn"; Brooks (Mistley), Ltd., for "Mistley Amy."

Open only to Ayrshires.

THE "ROWALLAN" CHALLENGE CUP (presented by LORD ROWALLAN), for the Ayrshire Cow or Heifer registered or eligible for registration with a number in the Ayrshire Cattle Herd Book, gaining the greatest number of points on Inspection, in the Milking Trials and Butter Tests. Awarded to A. Watson for "Barboigh Lilies 28th."

EXTRA PRIZES (offered by the English Committee of the Ayrshire Cattle Herd Book Society), for animals bred in England and Wales gaining the greatest number of points under the conditions of the "Rowallan" Cup. £10 to J. Bone for "Sheepeotes Relish"; £5 to J. Bone for "Sheepeotes Lady Love."

Open only to Guernseys.

THE "STAGENHOE" CHALLENGE CUP (presented by Mrs. W. BAILEY-HAWKINS), for the Guernsey Cow or Heifer gaining the greatest number of points on Inspection, in the Milking Trials and Butter Tests. Awarded to Hon. A. E. Guinness for "Bella's Cora 4th of Les Jetteries."

EXTRA PRIZES (offered by the English Guernsey Cattle Society):—£10 for the best Guernsey Cow or Heifer on Inspection, awarded to G. R. Cobb for "Rosey of Goodnestone 64th"; £10 for the Guernsey Cow or Heifer gaining the highest points in the Milking Trials and Butter Test, awarded to Hon. A. E. Guinness for "Bella's Cora 4th of Les Jetteries."

Open only to Jerseys.

THE "BLYTHWOOD" PERPETUAL CHALLENGE BOWL (presented by THE RT. HON. LORD BLYTH OF BLYTHWOOD), for the best Jersey Cow or Heifer bred in Great Britain or Ireland and entered or eligible for entry in the English Jersey Herd Book, on Inspection. Awarded to Mrs. H. Hawkins for "Everdon Pioneer's Beauty."

THE "BLYTHWOOD" PRODUCTION CHALLENGE BOWL (presented by the HEIRS OF THE LATE MR. J. H. SMITH-BARRY) for the Jersey Cow or Heifer gaining the greatest number of points in the Milking Trials and in the Butter Tests, provided that the animal has been bred in Great Britain or Ireland. Awarded to J. W. McCallum for "Pearelands Eileen 10th."

THE "JERSEY" PERPETUAL PRODUCTION TROPHY (presented by DR. H. and MISS CORNER), for the Jersey Cow or Heifer gaining the greatest number of points in the Milking Trials and Butter Tests. Any animal whose milk contains less than 4 per cent. of butter-fat on the day's yield will be disqualified. Awarded to J. W. McCallum for "Pearelands Eileen 10th."

THE "LOXWOOD" JUBILEE CHALLENGE CUP (presented by MR. M. F. NORTH) will be awarded to the Owner of the Jersey Cow or Heifer obtaining the highest number of points for Milk, Butter, Lactation, and Inspection. The average butter-fat to be not less than 4.5. Awarded to J. W. McCallum for "Pearelands Eileen 10th."

GOLD, SILVER AND BRONZE MEDALS (presented by the ENGLISH JERSEY CATTLE SOCIETY), for the first three animals in the Butter Test, obtaining not less than 42 points. Awarded to J. W. McCallum for "Pearelands Eileen 10th"; G. N. and Miss D. Charrington for "Hot Belle"; and H. S. Mountain for "Groombridge Thrip's Bella" respectively.

Open only to Kerries.

A SILVER CHALLENGE CUP (presented by the BRITISH KERRY CATTLE SOCIETY), for the Kerry Cow gaining the greatest number of points in the Milking Trials. Not awarded.

Open only to Dexters.

THE "LODER" PERPETUAL CHALLENGE CUP (presented by LADY LODER), for the Dexter Cow or Heifer gaining the most points on Inspection, in the Milking Trials and Butter Tests. Awarded to Lady Loder for "Grinstead Trixie 4th."

Inspection and Milking Trials Prizes.

CLASS 1.—DAIRY SHORTHORN COW.—Entered in or accepted for Coates' Herd Book. Born on or previous to 1st August, 1933. Cows entered in this Class must have yielded a minimum of 8,000 lbs. at five years old or over, or 6,000 lbs. at under five years old during a lactation period of 45 weeks, recorded by a recognised Milk Recording Society. *First* Inspection (£10), *Third* Milking Trial (£4) and *Extra* Inspection (£5) to J. Barnes for "Whittingslow Podger." *Second* Inspection (£6) to Chivers & Sons, Ltd., for "Histon Barrington 16th." *Third* Inspection (£4) and *First* Milking Trial (£10) to W. J. Wheeler for "Frieth Tiny 4th." *Fourth* Inspection (£2) to Major G. Miller Mundy for "Redrice Craggs 3rd." *Fifth* Inspection (£1) and *Fourth* Milking Trial (£2) to J. J. McMenemy for "Parkhouse Strawberry 16th." *Sixth* Inspection (£1) to Major G. Miller Mundy for "Knells Elliot Fernleaf 2nd." *Second* Milking Trial (£6) to A. Thomas Loyd for

"Lockinge Fairy 8th." *Fifth* Milking Trial (£1) to W. H. Vigus for "Revels (Glorious)." *Sixth* Milking Trial (£1) to Chivers & Sons, Ltd., for "Histon Duchess 5th."

CLASS 2.—DAIRY SHORTHORN COW.—Entered in or accepted for Coates' Herd Book. Born after 1st August, 1933, and which has produced two or more calves. *First* Inspection (£10) and *Sixth* Milking Trial (£1) to Lt.-Col. R. W. Barclay for "Buryhill Lady Ringlet 2nd." *Second* Inspection (£6) and *First* Milking Trial (£10) to J. Cronk for "Bournplace Dairymaid 3rd." *Third* Inspection (£4) to Major G. Miller Mundy for "Redrice Darling 10th." *Fourth* Inspection (£2) to Chivers & Sons, Ltd., for "Histon Royal Duchess 6th." *Fifth* Inspection (£1) to The Duke of Westminster for "Eaton Rosebud 10th." *Sixth* Inspection (£1) to King's College Farms for "Sizergh Primrose 4th." *Second* Milking Trial (£6) to W. H. Vigus for "Revels Lottie 2nd." *Third* Milking Trial (£4) to W. H. Vigus for "Revels Butterfly 2nd." *Fourth* Milking Trial (£2) to J. Cronk for "Greattew Princess Carrie 7th." *Fifth* Milking Trial (£1) to R. Tustian for "Greattew Janette 8th."

CLASS 3.—DAIRY SHORTHORN HEIFER.—Entered in or eligible for Coates' Herd Book. Born on or after 1st August, 1935, and having produced only one calf. *First* Inspection (£10) and *Fourth* Milking Trial (£2) to R. Tustian for "Greattew Barrington 2nd." *Second* Inspection (£6) and *Third* Milking Trial (£4) to J. Day for "Huxham Ladybird." *Third* Inspection (£4) and *Second* Milking Trial (£6) to W. H. Vigus for "Revels Alicia Barrington 2nd." *Fourth* Inspection (£2) and *Fifth* Milking Trial (£1) to A. Thomas Loyd for "Lockinge Buttercup 7th." *Fifth* Inspection (£1) and *First* Milking Trial (£10) to J. Day for "Huxham Rosette 2nd."

CLASS 4.—DAIRY SHORTHORN COW.—Not eligible for Classes 1 or 2. Cows entered in this Class must have yielded a minimum of 8,000 lbs. at five years old or over, or 6,000 lbs. at under five years old during a lactation period of 45 weeks, recorded by a recognised Milk Recording Society. *First* Inspection (£10), *First* Milking Trial (£10) and *Extra* Inspection (£5) to King's College Farms for "Lady." *Second* Inspection (£6) to H. Brazier for "Fill Pail." *Third* Inspection (£4) to Chivers & Sons, Ltd., for "Tulip 2nd." *Fourth* Inspection (£2) and *Second* Milking Trial (£6) to University Farm for "Cantab Star 13th."

CLASS 5.—DAIRY SHORTHORN HEIFER.—Cancelled.

CLASS 6.—LINCOLNSHIRE RED SHORTHORN COW.—Entered in or accepted for the Herd Book. Cows entered in this Class must have yielded a minimum of 7,000 lbs. at five years old or over, or 5,250 lbs. at under five years old either during a lactation period of 45 weeks or for any one completed year of a recognised Milk Recording Society. *First* Inspection (£10) to F. Russell Wood for "Bendish Charm 24th." *Second* Inspection (£6), *First* Milking Trial (£10) and *Extra* Inspection (£5) to Chivers & Sons, Ltd., for "Histon Fanny 8th." *Third* Inspection (£4) and *Second* Milking Trial (£6) to Chivers & Sons, Ltd., for "Histon Ashleaf 13th." *Fourth* Inspection (£2) and *Third* Milking Trial (£4) to Chivers & Sons, Ltd., for "Histon Dairymaid 92nd."

CLASS 7.—LINCOLNSHIRE RED SHORTHORN HEIFER.—Cancelled.

CLASS 8.—BRITISH FRIESIAN COW.—Entered in or accepted for the Herd Book or the Supplementary Register. Born on or previous to 1st August, 1933. Cows entered in this Class must have yielded a minimum of 8,000 lbs. at five years old or over, or 6,000 lbs. at under five years old either during a lactation period of 45 weeks or for any one completed year of a recognised Milk Recording Society. *First* Inspection (£10), *Second* Milking Trial (£6), British Friesian Cattle Society's Milking Trial (£5) and *Extra* Inspection (£5) to Strutt & Parker (Farms), Ltd., for "Lavenham Cactus 27th." *Second* Inspection (£6) and *Fourth*

Milking Trial (£2) to A. J. Creed for "Royal Akke 19th." *Third* Inspection (£4) and *Fifth* Milking Trial (£1) to Lord Rayleigh's Farms for "Terling Eclipse 32nd." *Fourth* Inspection (£2), *First* Milking Trial (£10) and British Friesian Cattle Society's Milking Trial (£8) to Strutt & Parker (Farms), Ltd., for "Lavenham Annie 41st." *Fifth* Inspection (£1) to Runwell Hospital Farm for "Denechworth Annie." *Sixth* Inspection (£1) to E. J. Chapman for "Egginton Miedema 4th." *Third* Milking Trial (£4) and British Friesian Cattle Society's Milking Trial (£2) to Pinkney Park Estate Co., Ltd., for "Hurdlesgrove Pel Betty 2nd." *Sixth* Milking Trial (£1) to Lord Rayleigh's Farms for "Terling Collona 17th."

CLASS 9.—BRITISH FRIESIAN COW.—Entered in or accepted for Herd Book or the Supplementary Register. Born after 1st August, 1933, and previous to 1st August, 1935. *First* Inspection (£10) and *Fifth* Milking Trial (£1) to Lord Rayleigh's Farms for "Terling Eclipse 34th." *Second* Inspection (£6), *Second* Milking Trial (£6) and British Friesian Cattle Society's Milking Trial (£5) to Strutt & Parker (Farms), Ltd., for "Lavenham Lilac 8th." *Third* Inspection (£4) and *Fourth* Milking Trial (£2) to Hodge Bros. for "Fintloch Jemima." *Fourth* Inspection (£2), *First* Milking Trial (£10) and British Friesian Cattle Society's Milking Trial (£8) to G. J. Caddey for "Egham Thelma 10th." *Fifth* Inspection (£1), *Third* Milking Trial (£4) and British Friesian Cattle Society's Milking Trial (£2) to J. M. Watt for "Monkhaus Ruby."

CLASS 10.—BRITISH FRIESIAN HEIFER.—Entered in or eligible for the Herd Book or the Supplementary Register. Born on or after 1st August, 1935, and having produced only one calf. *First* Inspection (£10) and *First* Milking Trial (£10) to Hodge Bros. for "Fintloch Silkie." *Second* Inspection (£6) and *Third* Milking Trial (£4) to W. Curtis & Son for "Barwyke Fokke Lilac." *Third* Inspection (£4) and *Second* Milking Trial (£6) to Hodge Bros. for "Fintloch Honey 2nd." *Fourth* Inspection (£2) and *Fourth* Milking Trial (£2) to W. Curtis & Son for "Barwyke Ilene."

CLASS 11.—SOUTH DEVON COW.—Entered in or accepted for the Herd Book. Born on or previous to 1st August, 1933. Cows entered in this Class must have yielded a minimum of 7,500 lbs. at five years old or over, or 5,600 lbs. at under five years old either during a lactation period of 45 weeks, or for any one completed year of a recognised Milk Recording Society. *First* Inspection (£10), *First* Milking Trial (£10) and *Extra* Inspection (£5) to W. Hunt for "Diptford Down's Milkmaid 13th." *Second* Inspection (£6) to J. T. Dennis for "Winsor Snowdrop 5th." *Third* Inspection (£4) to G. Wills for "Rydon Milkmaid 6th."

CLASS 12.—SOUTH DEVON COW.—Entered in or accepted for the Herd Book. Born after 1st August, 1933, and previous to 1st August, 1935. *First* Inspection (£10) and *Second* Milking Trial (£6) to V. Bunday for "Westerland Anne." *Second* Inspection (£6) and *First* Milking Trial (£10) to J. T. Dennis for "Winsor Alma 2nd." *Third* Inspection (£4) and *Third* Milking Trial (£4) to G. Wills for "Berry Hilda 9th."

CLASS 13.—SOUTH DEVON HEIFER.—Cancelled.

CLASS 14.—DEVON COW.—No Entry.

CLASS 15.—RED POLL COW.—Entered in or accepted for the Herd Book. Born on or previous to 1st August, 1933. Cows entered in this Class must have yielded a minimum of 8,000 lbs. at five years old or over, or 6,000 lbs. at under five years old either during a lactation period of 45 weeks or for any one completed year of a recognised Milk Recording Society. *First* Inspection (£10) and *Extra* Inspection (£5) to Mrs. T. R. Lindsay for "Downfield Grisilda." *Second* Inspection (£6) and *Fifth* Milking Trial (£1) to Mrs. W. Scrimgeour for "Wissett Nonsuch." *Third* Inspection (£4) and *First* Milking Trial (£10) to

Lady Denman for "Parham Minnehaha." *Fourth* Inspection (£2) to Mrs. H. D. Lewis for "Ciceter Queen Rita." *Fifth* Inspection (£1) to Lt.-Col. Sir Merrik R. Burrell, Bart., C.B.E., for "Knepp Prudence 21st." *Sixth* Inspection (£1) and *Third* Milking Trial (£4) to Stuart Paul for "Kirton Fantasy." *Second* Milking Trial (£6) to Mrs. R. M. Foot for "White Hill Arrogant Lily." *Fourth* Milking Trial (£2) to Lady Denman for "Gleaving Siskin." *Sixth* Milking Trial (£1) to Mrs. R. M. Foot for "White Hill Canny Blossom."

CLASS 16.—RED POLL COW.—Entered in or accepted for the Herd Book. Born after 1st August, 1933, and previous to 1st August, 1935. *First* Inspection (£10) and *Second* Milking Trial (£6) to Mrs. M. L. Griffith for "Hallingbury African Morn." *Second* Inspection (£6) and *First* Milking Trial (£10) to Stuart Paul for "Kirton Faithless."

CLASS 17.—RED POLL HEIFER.—Entered in or eligible for the Herd Book. Born on or after 1st August, 1935, and having produced only one calf. *First* Inspection (£10) to Mrs. H. D. Lewis for "Combwell Mince 2nd." *Second* Inspection (£6) and *Third* Milking Trial (£4) to Mrs. W. Scrimgeour for "Wissett Fantail." *Third* Inspection (£4) and *Second* Milking Trial (£6) to Stuart Paul for "Kirton Selector." *Fourth* Inspection (£2) and *First* Milking Trial (£10) to Brooks (Mistley), Ltd., for "Mistley Amy."

CLASS 18.—WELSH BLACK COW.—Cancelled.

CLASS 19.—AYRSHIRE COW.—Registered with a number in the Herd Book or Appendices. Born on or previous to 1st August, 1933. Cows entered in this Class must have yielded a minimum of 8,000 lbs. at five years old or over, or 6,000 lbs. at under five years old either during a lactation period of 45 weeks, or for any one completed year of a recognised Milk Recording Society. *First* Inspection (£10), *Third* Milking Trial (£4), Ayrshire Cattle Herd Book Society's Inspection (£2), Ayrshire Cattle Herd Book Society's Milking Trial (£2) and *Extra* Inspection (£5) to J. Templeton for "Rottenrow Kitty." *Second* Inspection (£6) and Ayrshire Cattle Herd Book Society's Inspection (£1) to A. Cochrane for "Elmhurst Khiva." *Third* Inspection (£4), *Sixth* Milking Trial (£1) and Ayrshire Cattle Herd Book Society's Inspection (£2) to R. Barbour for "Auchengibbert Ena." *Fourth* Inspection (£2), *Second* Milking Trial (£6), Ayrshire Cattle Herd Book Society's Inspection (£2) and Ayrshire Cattle Herd Book Society's Milking Trial (£3) to J. G. Lohar for "Overlaw Tote." *Fifth* Inspection (£1), *Fourth* Milking Trial (£1), Ayrshire Cattle Herd Book Society's Inspection (£1) and Ayrshire Cattle Herd Book Society's Milking Trial (£2) to A. W. Montgomerie for "Hill Duchess 16th." *Sixth* Inspection (£1) to J. R. P. Hedley for "Brooks Snowdrop." *First* Milking Trial (£10) and Ayrshire Cattle Herd Book Society's Milking Trial (£4) to L. K. Osmond for "Broomlands Bloom." *Fifth* Milking Trial (£1) and Ayrshire Cattle Herd Book Society's Milking Trial (£1) to J. G. Lohar for "Draffan Patricia 2nd."

CLASS 20.—AYRSHIRE COW.—Registered with a number in the Herd Book or Appendices. Born after 1st August, 1933, and previous to 1st August, 1935. *First* Inspection (£10) and *First* Milking Trial (£10) to A. Watson for "Barboigh Lillas 28th." *Second* Inspection (£6) to R. Barbour for "Kilfillan Shot 'Silk." *Third* Inspection (£4) and *Third* Milking Trial (£4) to D. Smith for "Kilmaurs Mains Mermaid 2nd." *Fourth* Inspection (£2) and *Second* Milking Trial (£6) to J. Bone for "Sheepcotes Relish." *Fifth* Inspection (£1) and *Fourth* Milking Trial (£2) to D. Smith for "Kilmaurs Mains Ruth 3rd." *Fifth* Milking Trial (£1) to A. Murray for "Kilfillan Stella."

CLASS 21.—AYRSHIRE HEIFER.—Registered with a number in the Herd Book or Appendices. Born on or after 1st August, 1935, and having

produced only one calf. *First Inspection* (£10) and *Fourth Milking Trial* (£2) to W. M. Grierson for "Gibson's Angela 6th." *Second Inspection* (£6) and *First Milking Trial* (£10) to A. Cochrane for "Nether Craig Marina." *Third Inspection* (£4) and *Second Milking Trial* (£6) to J. Bone for "Sheepcotes Lady Love." *Fourth Inspection* (£2) and *Fifth Milking Trial* (£1) to J. Logan for "Beauchamps Bun." *Fifth Inspection* (£1) to R. Drummond for "Bargower Lady Maud." *Third Milking Trial* (£4) to G. Templeton for "Carnell Ann 3rd." *Sixth Milking Trial* (£1) to L. K. Osmond for "Netherwood Diana."

CLASS 22.—GUERNSEY COW.—Entered in the Herd Book. Born on or previous to 1st August, 1933. Cows entered in this Class must have yielded a minimum of 8,000 lbs. at five years old or over, or 6,000 lbs. at under five years old, either during a lactation period of 45 weeks or for any one completed year of a recognised Milk Recording Society. *First Inspection* (£10), *Second Milking Trial* (£6) and *Extra Inspection* (£5) to G. R. Cobb for "Rosey of Goodnestone 64th." *Second Inspection* (£6) and *Third Milking Trial* (£4) to E. H. Rose for "Leweston La Belle 3rd." *Third Inspection* (£4) and *First Milking Trial* (£10) to Hon. A. E. Guinness for "Bella's Cora 4th of Les Jetteries." *Fourth Inspection* (£2) to A. Thomas Loyd for "Columbine of Ivy Gates." *Fifth Inspection* (£1) and *Fourth Milking Trial* (£2) to S. R. Hicks for "Rosina 3rd of Sausmarez Manor." *Fifth Milking Trial* (£1) to Capt. H. J. Pilbrow for "Lassie Darling of Mapleton."

CLASS 23.—GUERNSEY COW.—Entered in the Herd Book. Born after 1st August, 1933, and which has produced two or more calves. *First Inspection* (£10) and *Third Milking Trial* (£4) to Hon. A. E. Guinness for "Chick's Primrose." *Second Inspection* (£6) and *Fourth Milking Trial* (£2) to Hon. A. E. Guinness for "Holmbury Ivy 3rd." *Third Inspection* (£4) to H. A. Y. Dyson for "Floss of Payhay." *Fourth Inspection* (£2) and *First Milking Trial* (£10) to D. R. Woosley for "Primrose 3rd of La Croix." *Fifth Inspection* (£1) to Capt. H. J. Pilbrow for "Moss Gay 6th of Mapleton." *Second Milking Trial* (£6) to S. R. Hicks for "Way's Primula." *Fifth Milking Trial* (£1) to H. A. Y. Dyson for "Rex's Primrose of Avisford 3rd."

CLASS 24.—GUERNSEY HEIFER.—Entered in the Herd Book, and which has produced her first and only calf at or under the age of two years and nine months. *First Inspection* (£10) and *First Milking Trial* (£10) to Hon. A. E. Guinness for "Holmbury Bella's Cora." *Second Inspection* (£6) and *Third Milking Trial* (£4) to H. A. Y. Dyson for "Cuckoofield Edith." *Third Inspection* (£4) to J. Brooke for "Clopton Rose." *Fourth Inspection* (£2) and *Fourth Milking Trial* (£2) to H. E. Crawford for "Eswelle Duchess 6th." *Fifth Inspection* (£1) to E. H. Rose for "Leweston Wilma 3rd." *Second Milking Trial* (£6) to Lord Swaythling for "Pixie of Townhill." *Fifth Milking Trial* (£1) to Mrs. A. Gilbey for "Amber Rubina."

CLASS 25.—JERSEY COW.—English or Island bred, entered in or accepted for the Herd Book. Born on or previous to 1st August, 1933. Cows entered in this Class must have yielded a minimum of 8,000 lbs. at five years old or over, or 6,000 lbs. at under five years old, either during a lactation period of 45 weeks, or for any one completed year of a recognised Milk Recording Society. *First Inspection* (£10) and English Jersey Cattle Society's *Inspection* (£2) to Ovaltine Dairy Farm for "La Sente's Lady Draconis." *Second Inspection* (£6), English Jersey Cattle Society's *Cattle Inspection* (£1), *Sixth Milking Trial* (£1) and *Extra Inspection* (£5) to Ovaltine Dairy Farm for "Queen's Dream Lady." *Third Inspection* (£4), English Jersey Cattle Society's *Inspection* (£1) and *Second Milking Trial* (£6) to G. N. & Miss D. Charrington for "Hot Belle." *Fourth Inspection* (£2) and English Jersey Cattle Society's *Inspection* (10s.) to Dr. R. W. Wheldon for "Silver Crown 31st." *Fifth Inspection* (£1) to Mrs. R. M. Foot for

"White Hill Majestic Bess." *Sixth* Inspection (£1) to Sir John B. Lloyd for "Puck." *Seventh* Inspection (£1) to Ovaltine Dairy Farm for "Playmate of Oaklands." *First* Milking Trial (£10) to J. W. McCallum for "Pearceclands Eileen 10th." *Third* Milking Trial (£4) to H. S. Mountain for "Groombridge Recorder's Imogen." *Fourth* Milking Trial (£2) to Mrs. G. J. Caddey for "Cambraie Elfa 2nd." *Fifth* Milking Trial (£1) to H. S. Mountain for "Groombridge Thrip's Bella." *Seventh* Milking Trial (£1) to Lord Faringdon for "Madeap."

CLASS 26.—JERSEY COW.—English or Island bred, entered in or accepted for the Herd Book. Born after 1st August, 1933, and which has produced two or more calves. *First* Inspection (£10), English Jersey Cattle Society's Inspection (£2) to J. W. McCallum for "Hauteville Orange." *Second* Inspection (£6), English Jersey Cattle Society's Inspection (£1) and *Fifth* Milking Trial (£1) to Miss G. M. Yule for "The Poplar's Pride Girl." *Third* Inspection (£4), English Jersey Cattle Society's Inspection (£1) and *First* Milking Trial (£10) to Mrs. H. Hawkins for "Arkona's Rosy." *Fourth* Inspection (£2) to Ovaltine Dairy Farm for "Peggy Girl." *Fifth* Inspection (£1) and *Seventh* Milking Trial (£1) to Mrs. A. M. Hall for "Delightful Daffodil." *Second* Milking Trial (£6) to Capt. A. S. Lockwood for "Normanby Sweep's Claudette." *Third* Milking Trial (£4) to J. W. McCallum for "Henbury Primrose 71st."

CLASS 27.—JERSEY HEIFER.—English or Island bred, entered in or eligible for the Herd Book, and which has produced her first and only calf at or under the age of 2½ years. *First* Inspection (£10), English Jersey Cattle Society's Inspection (£2) and *Seventh* Milking Trial (£1) to Mrs. H. Hawkins for "Everdon Pioneer's Beauty." *Second* Inspection (£6) and English Jersey Cattle Society's Inspection (£1) to Mrs. A. M. Hall for "Feterita 15th." *Third* Inspection (£4) and English Jersey Cattle Society's Inspection (£1) to Ovaltine Dairy Farm for "Slate House Standard Bess." *Fourth* Inspection (£2) and English Jersey Cattle Society's Inspection (10s.) to Dr. R. W. Wheldon for "Moors Fern Financial." *Fifth* Inspection (£1) and *Fifth* Milking Trial (£1) to W. E. Press for "Wolvers Deborah 2nd." *Sixth* Inspection (£1) and *Third* Milking Trial (£4) to Lady Hervey-Bathurst for "La Chasserie Nuriel." *Seventh* Inspection (£1) to Dr. R. W. Wheldon for "Girlish Lady Bunbury." *First* Milking Trial (£10) to The Ladies Ryder and Anson for "Knowle Foxglove." *Second* Milking Trial (£6) to Mrs. R. M. Foot for "White Hill Dainty Bess." *Fourth* Milking Trial (£2) to W. E. Press for "Wolvers Bess 2nd." *Sixth* Milking Trial (£1) to Ovaltine Dairy Farm for "Ovaltine Wizard's Kathleen."

CLASS 28.—KERRY COW.—Cancelled.

CLASS 29.—KERRY HEIFER.—Cancelled.

CLASS 30.—DEXTER COW.—Entered in or accepted for the Herd Book. Cows entered in this Class must have yielded a minimum of 5,000 lbs. at five years old or over, or 3,750 lbs. at under five years old, either during a lactation period of 45 weeks or for any one completed year of a recognised Milk Recording Society. *First* Inspection (£10), Dexter Cattle Society's Inspection (£2), *Second* Milking Trial (£6) and *Extra* Inspection (£5) to Lady Loder for "Croesus." *Second* Inspection (£6) and Dexter Cattle Society's Inspection (£1) to Miss N. M. Lloyd for "Pentre Hobyn Periwinkle 2nd." *Third* Inspection (£4) and *First* Milking Trial (£10) to Lady Loder for "Grinstead Trixie 4th." *Fourth* Inspection (£2) and *Fourth* Milking Trial (£2) to Mrs. E. C. Clarke for "Ellens Cowslip." *Fifth* Inspection (£1) and *Third* Milking Trial (£4) to Mrs. E. C. Clarke for "Grinstead Dollie 4th."

CLASS 31.—DEXTER HEIFER.—Cancelled.

For Dairy Cows and Heifers in Calf and Dry.

CLASS 32.—DAIRY SHORTHORN COW.—Entered in or accepted for Coates' Herd Book. Born previous to 1st August, 1935, and having produced at least one calf. Cows entered in this Class must have yielded a minimum of 8,000 lbs. at five years old or over, or 6,000 lbs. at under five years old during a lactation period not exceeding 45 weeks, recorded by a recognised Milk Recording Society. *First* (£8) to J. Barnes for "Clanville Butterfly 3rd." *Second* (£4) to King's College Farms for "Holmescales Furbelow 3rd." *Third* (£2) to Major G. Miller Mundy for "Clanville Wild Briar 2nd."

CLASS 33.—DAIRY SHORTHORN HEIFER.—Entered in or eligible for Coates' Herd Book. Born on or after 1st August, 1935, and in calf with a first calf.—No Awards.

CLASS 34.—DAIRY SHORTHORN COW.—Not eligible for Class 32. Born previous to 1st August, 1935, and having produced at least one calf. Cows entered in this Class must have yielded a minimum of 8,000 lbs. at five years old or over, or 6,000 lbs. at under five years old during a lactation period not exceeding 45 weeks, recorded by a recognised Milk Recording Society. *First* (£8) to H. Brazier for "Beauty." *Second* (£4) to J. & H. Jackson for "Minnie." *Third* (£2) to H. Brazier for "Daisy."

CLASS 35.—DAIRY SHORTHORN HEIFER.—Born on or after 1st August, 1935, and in calf with a first calf. Not showing more than four broad teeth, or as evidence of age the ear-mark number affixed by the Recording Society under the Ministry of Agriculture's Calf-Marking Scheme will be recognised. Not eligible for Class 33. *First* (£8) to J. & H. Jackson for "Eva 2nd." *Second* (£4) to King's College Farms for "Gracie."

CLASS 36.—LINCOLNSHIRE RED SHORTHORN COW.—No Entry.

CLASS 37.—LINCOLNSHIRE RED SHORTHORN HEIFER.—No Entry.

CLASS 38.—BRITISH FRIESIAN COW.—Entered in or accepted for the Herd Book or the Supplementary Register. Born previous to 1st August, 1935, and having produced at least one calf. Cows entered in this Class must have yielded a minimum of 8,000 lbs. at five years old or over, or 6,000 lbs. at under five years old either during a lactation period not exceeding 45 weeks, or for any one completed year of a recognised Milk Recording Society. *First* (£8) to Strutt & Parker (Farms), Ltd., for "Lavenham Annie 29th." *Second* (£4) to Hodge Bros. for "Fintloch Irette." *Third* (£2) to W. Curtis & Son for "Barwyke Dewdrop 3rd."

CLASS 39.—BRITISH FRIESIAN HEIFER.—Entered in or eligible for the Herd Book or the Supplementary Register. Born on or after 1st August, 1935, and in calf with a first calf. *First* (£8) to G. J. Caddey for "Egham Rue 3rd." *Second* (£4) to Pinkney Park Estates Co., Ltd., for "Hurdlesgrove Signet Ethel." *Third* (£2) to Lord Rayleigh's Farms for "Terling Torch 87th."

CLASS 40.—SOUTH DEVON COW.—Entered in or accepted for the Herd Book. Born previous to 1st August, 1935, and having produced at least one calf. Cows entered in this Class must have yielded a minimum of 7,500 lbs. at five years old or over, or 5,000 lbs. at under five years old either during a lactation period not exceeding 45 weeks, or for any one completed year of a recognised Milk Recording Society. *First* (£8) to G. Wills for "Rydon Primula 9th." *Second* (£4) to J. T. Dennis for "Winsor Alma." *Third* (£2) to G. Wills for "Rydon Milkmaid 11th."

CLASS 41.—SOUTH DEVON HEIFER.—Entered in or eligible for the Herd Book. Born on or after 1st August, 1935, and in calf with a first calf. *First* (£8) to V. Bunday for "Allenhayes Janis 1st."

CLASS 42.—DEVON COW.—No Entry.

CLASS 43.—RED POLL COW.—Entered in or accepted for the Herd Book. Born previous to 1st August, 1935, and having produced at least one calf. Cows entered in this Class must have yielded a minimum of 8,000 lbs. at five years old or over, or 6,000 lbs. at under five years old either during a lactation period not exceeding 45 weeks, or for any one completed year of a recognised Milk Recording Society. *First* (£8) to Mrs. R. M. Foot for "White Hill Charming Flirt."

CLASS 44.—RED POLL HEIFER.—Entered in or eligible for the Herd Book. Born on or after 1st August, 1935, and in calf with a first calf. No Award.

CLASS 45.—WELSH BLACK COW.—No Award.

CLASS 46.—AYRSHIRE COW.—Registered with a number in the Herd Book or Appendices. Born previous to 1st August, 1935, and having produced at least one calf. Cows entered in this Class must have yielded a minimum of 8,000 lbs. at five years or over, or 6,000 lbs. at under five years old either during a lactation period not exceeding 45 weeks, or for any one completed year of a recognised Milk Recording Society. *First* (£8) to H. Wyllie for "Brooks Bright Queen." *Second* (£4) to A. Cochrane for "Nether Craig Silk." *Third* (£2) to J. Bone for "Mains of Park Doll."

CLASS 47.—AYRSHIRE HEIFER.—Registered with a number in the Herd Book or Appendices. Born on or after 1st August, 1935, and in calf with a first calf. *First* (£8) to A. W. Montgomerie for "Lessnessock Lady Campbeltown." *Second* (£4) to R. Drummond for "Bargower Cherry 22nd." *Third* (£2) to R. Sillars & Son for "Ickham Bessie 38th."

CLASS 48.—GUERNSEY COW.—Entered in or accepted for the Herd Book. Born previous to 1st August, 1935, and having produced at least one calf. Cows entered in this Class must have yielded a minimum of 8,000 lbs. at five years old or over, or 6,000 lbs. at under five years old either during a lactation period not exceeding 45 weeks, or for any one completed year of a recognised Milk Recording Society. *First* (£8) to H. E. Crawford for "Calehill Snow 5th."

CLASS 49.—GUERNSEY HEIFER.—Entered in or eligible for the Herd Book. Born previous to 1st January, 1936, and in calf with a first calf. *First* £8 to Lord Swaythling for "Queenie of Ville-es-Pies."

CLASS 50.—JERSEY COW.—English or Island bred, entered in or accepted for the Herd Book. Born previous to 1st August, 1935, and having produced at least one calf. Cows entered in this Class must have yielded a minimum of 8,000 lbs. at five years old or over, or 6,000 lbs. at under five years old either during a lactation period not exceeding 45 weeks, or for any one completed year of a recognised Milk Recording Society. *First* (£8) to Mrs. A. M. Hall for "Rochette's Cute."

CLASS 51.—JERSEY HEIFER.—No Entry.

CLASS 52.—KERRY COW.—No Entry.

CLASS 53.—KERRY HEIFER.—No Entry.

CLASS 54.—DEXTER COW.—No Entry.

CLASS 55.—DEXTER HEIFER.—Entered in or eligible for the Herd Book. Born on or after 1st August, 1935, and in calf with a first calf. *First* (£8) to Mrs. E. Carlos Clarke for "Ellen Delia."

CLASS 56.—COWS OF SHORTHORN TYPE IN MILK.—Cancelled.

BUTTER TESTS.

SHORTHORNS, entered in Classes 1 to 7.—*First* (£8) to W. J. Wheeler for "Frieth Tiny 4th." *Second* (£4) to King's College Farms for "Lady." *Third* (£2) to Major G. Miller Mundy for "Kuels Elliot Fernleaf 2nd." *Fourth* (£1) to Chivers & Sons, Ltd., for "Histon Dairymaid 92nd." *Fifth* (£1) to Chivers & Sons, Ltd., for "Histon Fanny 8th." *Sixth* (£1) to H. Brazier for "Fill Pail."

BRITISH FRIESIANS, entered in Classes 8 to 10.—*First* (£8) to A. J. Creed for "Royal Akke 19th." *Second* (£4) to Pinkney Park Estates Co., Ltd., for "Hurdlesgrove Pel Betty 2nd." *Third* (£2) to Lord Rayleigh's Farms for "Terling Eclipse 32nd." *Fourth* (£1) to E. J. Chapman for "Egginton Miedema 4th." *Fifth* (£1) to Strutt & Parker (Farms), Ltd., for "Lavenham Annie 41st." *Sixth* (£1) to Lord Rayleigh's Farms for "Terling Collona 17th."

AYRSHIRES, entered in Classes 19 to 21.—*First* (£8) and Ayrshire Cattle Herd Book Society's (£1) to J. Bone for "Sheepcotes Relish." *Second* (£4) to A. Watson for "Barboigh Lillias 28th." *Third* (£2) and Ayrshire Cattle Herd Book Society's (£1) to J. G. Lohar for "Overlaw Tote." *Fourth* (£1) and Ayrshire Cattle Herd Book Society's (£2) to D. Smith for "Kilmaurs Mainus Mermaid 2nd." *Fifth* (£1) and Ayrshire Cattle Herd Book Society's (£1) to A. W. Montgomerie for "Hill Duchess 16th."

GUERNSEYS, entered in Classes 22 to 24.—*First* (£8) to Hon. A. E. Guinness for "Bella's Cora 4th of Les Jetteries." *Second* (£4) to E. H. Rose for "Leweston La Belle 3rd." *Third* (£2) to S. R. Hicks for "Rosina 3rd of Sausmarez Manor." *Fourth* (£1) to G. R. Cobb for "Rosey of Goodnestone 64th." *Fifth* (£1) to Hon. A. E. Guinness for "Holmbury Ivy 3rd."

JERSEYS, entered in Classes 25 to 27.—*First* (£8) to J. W. McCallum for "Pearcelands Eileen 10th." *Second* (£4) to G. N. and Miss D. Charrington for "Hot Belle." *Third* (£2) to H. S. Mountain for "Groombridge Thrip's Bella." *Fourth* (£1) to Mrs. L. Corbett for "Hockley Fern." *Fifth* (£1) to H. S. Mountain for "Groombridge Recorder's Imogen." *Sixth* (£1) to Ovaltine Dairy Farm for "Queen's Dream Lady." *Seventh* (£1) to Lord Faringdon for "Madeap." *Eighth* (£1) to G. McWilliam for "Bollhayes Zelda's Queen."

OTHER BREEDS, entered in Classes 11 to 17 and 30.—*First* (£5) to J. T. Dennis for "Winsor Alma 2nd" (South Devon). *Second* (£3) to V. Bunday for "Westerland Anne" (South Devon). *First* (£5) to Mrs. R. M. Foot for "White Hill Arrogant Lily" (Red Poll). *Second* (£3) to Mrs. R. M. Foot for "White Hill Canny Blossom" (Red Poll). *First* (£3) to Lady Loder for "Grinstead Trixie 4th" (Dexter). *Second* (£2) to Lady Loder for "Crocus" (Dexter).

BULLS (Progeny of).

CLASS 57.—DAIRY SHORTHORN BULL (Progeny of). Entered in or eligible for Coates' Herd Book. *First* (£5) to R. Tustian for "Greattew Janette 8th" and "Greattew Barrington 2nd" progeny of "Greattew Trickester."

CLASS 58.—LINCOLNSHIRE RED SHORTHORN BULL (Progeny of). Entered in or eligible for the Herd Book. *First* (£5) to Chivers & Sons, Ltd., for "Histon Ashleaf 13th" and "Histon Fanny 8th" progeny of "Bendish Dairy King."

CLASS 59.—BRITISH FRIESIAN BULL (Progeny of). Entered in or eligible for the Herd Book or Supplementary Register. *First* (£5) to Hodge Bros. for "Fintloch Honey 2nd" and "Fintloch Silkie" progeny of "Terling Matrix." *Second* (£3) to W. Curtis & Son for "Barwyke Ilene" and "Barwyke Fokke Lilac" progeny of "Sands Fokke 26th."

CLASS 60.—RED POLL BULL (Progeny of). Entered in or eligible for the Herd Book.—No Awards.

CLASS 61.—AYRSHIRE BULL (Progeny of). Entered in or eligible for the Herd Book or Appendices. *First* (£5) to John Bone for "Sheepcotes Relish" and "Sheepcotes Lady Love" progeny of "Rottenrow Milkman."

CLASS 62.—GUERNSEY BULL (Progeny of).—No Entry.

CLASS 63.—JERSEY BULL (Progeny of).—No Awards.

CLASS 64.—BULL OF ANY OTHER DAIRY BREED.—No Awards.

SHE GOATS AND GOATLINGS.

TROPHIES AND CUPS.

Open to all Breeds.

THE "HOLMES PEGLER JUBILEE" PERPETUAL CHALLENGE TROPHY for the Goat gaining the highest number of points in the Milking Competition and by Inspection. Awarded to Miss M. W. Harrison for "Humble of Weald" (British Saanen).

THE BRITISH GOAT SOCIETY'S TEN-GUINEA PERPETUAL CHALLENGE CUP for the best Goat over two years that has borne a kid. Awarded to Miss K. M. Bullard for "Malverley Marguerite" (British Alpine).

THE "BARONESS BURDETT-COUTTS" PERPETUAL CHALLENGE CUP for the Goat gaining the highest number of points in the Milking Competition and by Inspection. Awarded to Miss E. M. Gesley Hall for "Webb Demeter" (British Toggenburg).

THE "TREMEDDA SELENE" PERPETUAL CHALLENGE CUP for the Goat gaining highest points in the Milking Competition. Awarded to Miss J. Mostyn Owen for "Mostyn Meecha" (British).

THE "DEWAR" PERPETUAL CHALLENGE CUP for a Female Goat in Milk, and Goatling. Awarded to Miss J. Mostyn Owen for "Mostyn Meecha" (British) and "Mostyn Magic" (British).

THE "RIDING" CHALLENGE CUP, offered by the BRITISH GOAT SOCIETY, for the best group of three Goats exhibited by the same owner. Awarded to J. R. Egerton for "Malpas Mariella," "Twinstead Thrifty" and "Malpas Margaritrose" (British Alpines).

THE "DEWAR" PERPETUAL CHALLENGE TROPHY for the Goat over two years old, other than an Anglo-Nubian, entered in the British Goat Society's Herd Book, gaining the highest number of points in the Milking Competition. Awarded to Miss J. Mostyn Owen for "Mostyn Meecha" (British).

THE "MUNDULLA" PERPETUAL CHALLENGE CUP will be awarded to the owner of the best Dual Purpose Goat that has kidded once only. Any Goat disqualified from the Milking Competition for insufficiency of butter-fat will be ineligible to compete for this Cup. Awarded to Miss K. Pelly for "Theydon Bellaritzza" (Anglo-Nubian).

Open only to Toggenburgs.

THE "TOGGENBURG" PERPETUAL CHALLENGE CUP for the Pure Toggenburg Goat or Goatling entered in the Toggenburg Section of the British Goat Society's Herd Book, gaining the highest number of points on Inspection. Awarded to Miss E. M. Sheppard for "Widdington Wintersweet."

THE "STRAKER" CHALLENGE CUP for the Toggenburg Goat over two years old, gaining the highest number of points in either of the Milking Competitions. Awarded to Miss E. M. Shepherd for "Widdington Willenda."

Open only to British Alpines.

THE "ABBEY" PERPETUAL CHALLENGE CUP for the British Alpine Goat gaining the highest number of points on Inspection and Milking. A goat to compete must be bred by the Exhibitor, entered in the British Alpine Section or Register of the British Goat Society's Herd Book, and obtain an award in its Inspection Class. Awarded to Mrs. Y. I. Dyson for "Yid Teasel."

Open only to Saanens.

THE "SAANEN" CHALLENGE CUP for the Saanen Goat bred by the Exhibitor and entered in the Saanen Section of the Herd Book, gaining the highest number of points on Inspection and in Milking. Awarded to Miss E. Skidmore for "Heddon Caroline."

THE "DELAMERE" PERPETUAL CHALLENGE TROPHY for the best Saanen Goat or Goatling on Inspection. Such animal to be entered in the Saanen Section of the Herd Book and bred by the Exhibitor. Awarded to Miss C. Booth for "Springfield Solace."

Open only to British Saanens.

THE "CHAMBERLAIN" PERPETUAL CHALLENGE TROPHY for the British Saanen Goat gaining the highest number of points on Inspection and Milking. A goat to compete must be bred by the Exhibitor, entered in the British Saanen Section or Register of the Herd Book, and obtain an award in its Inspection Class. Awarded to Miss M. W. Harrison for "Humble of Weald."

THE "MOSTYN MARIGOLD" PERPETUAL CHALLENGE CUP will be awarded to the Owner of the best British Saanen Goat or Goatling entered in the British Saanen Section or Register of the Herd Book. Awarded to Miss M. W. Harrison for "Humble of Weald."

Open only to Anglo-Nubians.

THE "POMEROY" PERPETUAL CHALLENGE CUP for the Anglo-Nubian Goat, entered in the Anglo-Nubian Section of the British Goat Society's Herd Book, gaining the highest number of points in the Milking Competition. Awarded to Mrs. R. M. Greatrex for "Theydon Barda."

THE "EGERTON" PERPETUAL CHALLENGE TROPHY will be awarded to the Owner of the Anglo-Nubian Goat gaining the highest number of points on Inspection and in Milking. A goat to compete must be entered in the Anglo-Nubian Section, or the Anglo-Nubian Probationer's Record of the Herd Book, obtain an award in its Inspection Class and compete in the Quality Milking Competition, in which it must yield milk containing not less than 4 per cent. of butterfat at both milkings. Awarded to Mrs. R. M. Greatrex for "Theydon Barda."

Open only to Goatlings.

A BRONZE MEDAL offered by the British Goat Society for the best Goatling in Classes 49 to 53. Awarded to J. R. Egerton for "Malpas Margaritrose" (British Alpine).

MILKING TRIAL PRIZES.

CLASS 65.—SHE-GOATS, FIRST KIDDERS.—*First* (£6) to Miss M. W. Harrison for "Hint of Weald" (British Saanen). *Second* (£3) to Miss Pope for "Pull of Bashley" (British). *Third* (£2) to Miss K. Pelly

for "Theydon Bellaritzza" (Anglo-Nubian). *Fourth* (£1) to Mrs. R. K. Morecom for "Cornish Puffin" (British). *Fifth* (10s.) to Mrs. R. K. Morecom for "Cornish Frisky" (British Toggenburg).

CLASS 66.—SHE-GOATS.—Not eligible for Class 65.—*First* (£6) to Miss J. Mostyn-Owen for "Mostyn Meecha" (British). *Second* (£3) to Miss E. M. Gresley Hall for "Webb Demeter" (British Toggenburg). *Third* (£2) to Miss M. W. Harrison for "Humble of Weald" (British Saanen). *Fourth* (£1) to Mrs. R. M. Greatrex for "Theydon Barda" (Anglo-Nubian). *Fifth* (10s.) to Miss M. W. Harrison for "Hartye of Weald" (British Saanen).

INSPECTION PRIZES.

CLASS 67.—TOGGENBURG SHE-GOATS.—Entered in or eligible for entry in the Toggenburg Section of the Herd Book. *First* (£2 10s.) to Miss E. M. Sheppard for "Widdington Wintersweet." *Second* (£1 10s.) to Miss E. M. Sheppard for "Widdington Willenda." *Third* (£1) to Mrs. E. Doiny for "Cheeky of Honiton." *Fourth* (10s.) to A. G. Doiny for "Hargrave Christabelle."

CLASS 68.—BRITISH ALPINE SHE-GOATS.—Entered in or eligible for entry in the British Alpine Section or Register of the Herd Book. *First* (£2 10s.) to Miss K. M. Bullard for "Milverley Marguerite." *Second* (£1 10s.) to Miss Pope for "Highland Mauviette." *Third* (£1) to J. R. Egerton for "Malpas Mariella." *Fourth* (10s.) to J. R. Egerton for "Malpas Matilda." *Fifth* (10s.) to Mrs. Y. J. Dyson for "Yid Teasel."

CLASS 69.—SAANEN SHE-GOATS.—Entered in or eligible for entry in the Saanen Section of the Herd Book. *First* (£2 10s.) to Mrs. B. A. Browell for "Heddon Cicely." *Second* (£1 10s.) to Miss G. Booth for "Springfield Solace." *Third* (£1) to Miss E. Webb for "Pitsea Polly." *Fourth* (10s.) to A. A. Plimpton for "Autherd Souvenir." *Fifth* (10s.) to Miss E. Skidmore for "Heddon Caroline."

CLASS 70.—BRITISH SAANEN SHE-GOATS.—Entered in or eligible for entry in the British Saanen Section or Register of the Herd Book. *First* (£2 10s.) to Miss M. W. Harrison for "Humble of Weald." *Second* (£1 10s.) to Miss Pope for "Heddon Silver." *Third* (£1) to Miss M. W. Harrison for "Hartye of Weald." *Fourth* (10s.) to Miss E. Skidmore for "Heddon Sandalshoe." *Fifth* (10s.) to Miss M. W. Harrison for "Hint of Weald."

CLASS 71.—ANGLO-NUBIAN SHE-GOATS.—Entered in or eligible for entry in the Anglo-Nubian Section or Probationer's Record of the Herd Book. *First* (£2 10s.) to Miss K. Pelly for "Theydon Bellaritzza." *Second* (£1 10s.) to J. R. Egerton for "Malpas Merrilegs." *Third* (£1) to Mrs. R. M. Greatrex for "Theydon Barda." *Fourth* (10s.) to J. R. Egerton for "Malpas Musette." *Fifth* (10s.) to Miss K. Pelly for "Theydon Butterkin."

CLASS 72.—BRITISH TOGGENBURG SHE-GOATS.—Entered in or eligible for entry in the British Toggenburg Section or Register of the Herd Book. *First* (£2 10s.) to Miss E. M. Gresley Hall for "Webb Demeter." *Second* (£1 10s.) to Miss K. R. Barnaby for "Bitterne Willow." *Third* (£1) to Mrs. M. S. Carlyle Bell for "Petersfield Precocity." *Fourth* (10s.) to Mrs. R. K. Morecom for "Cornish Frisky." *Fifth* (10s.) to Miss E. M. Gresley Hall for "Webb Dauphinette."

CLASS 73.—SHE-GOATS.—ANY OTHER VARIETY.—Not eligible for previous Classes. *First* (£2 10s.) to Miss J. Mostyn Owen for "Mostyn Meecha" (British). *Second* (£1 10s.) to Miss J. Mostyn Owen for "Mostyn Maysie" (British). *Third* (£1) to Miss E. D. Ashbee for "Bitterne Wallflower" (British). *Fourth* (10s.) to Mrs. R. K. Morecom for "Cornish Playful" (British). *Fifth* (10s.) to Miss Pope for "Pull of Bashley" (British).

CLASS 74.—BRITISH ALPINE GOATLINGS.—Entered in or eligible for entry in the British Alpine Section or Register of the Herd Book, over 1 year but not exceeding 2 years old. *First* (£2 10s.) to J. R. Egerton for "Malpas Margaritrose." *Second* (£1 10s.) to J. R. Egerton for "Twinstead Thrifty." *Third* (£1) to Miss Pope for "Prank of Bashley." *Fourth* (10s.) to Mrs. Y. I. Dyson for "Yid Verity." *Fifth* (10s.) to Miss K. M. Bullard for "Broadland Woodcock."

CLASS 75.—SAANEN OR BRITISH SAANEN GOATLINGS.—Entered in or eligible for entry in the Saanen Section or British Saanen Section or Register of the Herd Book, over 1 year but not exceeding 2 years old.—*First* (£2 10s.) to Miss C. Booth for "Springfield Lisa." *Second* (£1 10s.) to Miss K. Pelly for "Theydon Marguerite." *Third* (£1) to A. A. Plimpton for "Autherd Lucille." *Fourth* (10s.) to Miss K. M. Bullard for "Broadland Linnet." *Fifth* (10s.) to Mrs. M. E. T. Howden for "Mossrose of Cottishall."

CLASS 76.—ANGLO-NUBIAN GOATLINGS.—Entered in or eligible for entry in the Anglo-Nubian Section or Probationer's Record of the Herd Book, over 1 year but not exceeding 2 years old. *First* (£2 10s.) to Miss K. Pelly for "Menlo Motley." *Second* (£1 10s.) to J. R. Egerton for "Malpas Merle." *Third* (£1) to J. R. Egerton for "Malpas Meriel." *Fourth* (10s.) to Mrs. R. M. Greatrex for "Marehurst Urelin." *Fifth* (10s.) to Miss E. Skidmore for "Heddon Naomi."

CLASS 77.—TOGGENBURG OR BRITISH TOGGENBURG GOATLINGS.—Entered in or eligible for the Toggenburg Section or British Toggenburg Section or Register of the Herd Book, over 1 year but not exceeding 2 years old. *First* (£2 10s.) to Mrs. Roderick for "Granta Corona." *Second* (£1 10s.) to Mrs. M. S. Carlyle Bell for "Petersfield Petunia." *Third* (£1) to Miss K. R. Barnaby for "Bitterne Fluster." *Fourth* (10s.) to Miss M. W. Harrison for "Lush of Weald." *Fifth* (10s.) to Mrs. R. M. Greatrex for "Widdington Willindaheyne."

CLASS 78.—GOATLINGS, ANY OTHER VARIETY.—Not eligible for previous Classes, over 1 year but not exceeding 2 years old. *First* (£2 10s.) to Miss J. Mostyn Owen for "Mostyn Magie" (British). *Second* (£1 10s.) to Mrs. R. K. Morcom for "Cornish Marmalade" (British). *Third* (£1) to Mrs. R. M. Greatrex for "Hackwood Peasblossom" (British). *Fourth* (10s.) to Miss E. D. Ashbee for "Sandhurst Mimosa" (British).

CHEESE.

TROPHIES AND CUPS.

Open to all Varieties.

THE "LONSDALE" PERPETUAL CHALLENGE TROPHY (presented by the EARL OF LONSDALE, K.G., G.C.V.O.), for the best exhibit of Cheese made on the farm occupied by the Exhibitor, and the product of whole milk produced thereon. Awarded to J. N. Bourne for Cheshire.

Open only to Scottish Cheese.

THE AYRSHIRE AGRICULTURAL ASSOCIATION'S PERPETUAL CHALLENGE TROPHY (presented by LORD ROWALLAN), for the best exhibit of Scottish Cheese. Such cheese to be made on the farm in Scotland occupied by the Exhibitor and to be the product of whole milk produced thereon. Awarded to S. McCollm for Ayrshire Dunlop.

Open only to Stilton and Wensleydale.

CHAMPION CUP, value £10 10s. (presented by the CORPORATION OF THE CITY OF LONDON), will be awarded to the Maker of the best exhibit of Stilton or Wensleydale Cheese. Awarded to Wilts United Dairies, Ltd. (Sweepstone) for Stilton.

Open only to Dominion Cheddar.

THE "BLEDISLOE" PERPETUAL CHALLENGE TROPHY, value 50 Guineas (presented by VISCOUNT BLEDISLOE, P.C., G.C.M.G., K.B.E.), for the best exhibit of Cheddar Cheese produced in the British Empire (overseas), excluding Eire. Awarded to Pine Bush Co-operative Dairy Co., New Zealand.

THE "BLEDISLOE" PERPETUAL CHALLENGE CUP, value 50 Guineas (presented by VISCOUNT BLEDISLOE, P.C., G.C.M.G., K.B.E.), for the Provincial Area of New Zealand exhibiting the best Cheese. Awarded to the Province of Southland.

THE "HANSEN" CHALLENGE TROPHY, value £25 (presented by MESSRS. GHR. HANSEN'S LABORATORY, LTD.), for the best exhibit of Cheddar Cheese produced in the British Empire (overseas), excluding Eire. Awarded to Pine Bush Co-operative Dairy Co., New Zealand.

Open only to Cheshire.

THE "BLAND" CHALLENGE CUP (value 20 Guineas) and £5 in cash (presented by MR. C. BLAND) for the best exhibit of Cheshire Cheese. Awarded to J. N. Bourne.

Open only to Small Hard Pressed.

A SILVER FRUIT DISH (presented by MRS. A. S. McWILLIAM, M.B.E.), for the best exhibit of small pressed quick-ripening cheese. Awarded to N. Osborne.

Open only to Inter-County Class.

THE "INTER-COUNTY" CHALLENGE SHIELD (presented by the late JOHN BENSON), for the winner of the Inter-County Cheese Competition. Awarded to Gloucestershire.

Open only to Hard-pressed Varieties other than Stilton, Wensleydale, Cheddar and Cheshire.

CHAMPION CUP, value £10 10s. (presented by the CORPORATION OF THE CITY OF LONDON), will be awarded to the Maker of the best exhibit of Hard-pressed Cheese other than Stilton, Wensleydale, Cheddar and Cheshire. Awarded to S. McCollm for Ayrshire Dunlop.

CLASS 79.—STILTON (6 Cheeses). Open only to Dairy Farmers. (Factors or Factories are not eligible to compete.)—Cancelled.

CLASS 80.—STILTON (12 Cheeses).—*First* (£10 and Silver Medal) to Stathern & District Dairy, Ltd. *Second* (£5) to R. L. Shepherd. *Third* (£3) to Long Clawson Dairy, Ltd. (Hose Dairy). *Fourth* (£1) to Wilts United Dairies, Ltd. (Sweepstone).

CLASS 81.—STILTON (BLUE), NATIONAL MARK (6 Cheeses).—*First* (£6) to Wilts United Dairies, Ltd. (Sweepstone). *Second* (£4) to R. L. Shepherd. *Third* (£2) to Long Clawson Dairy, Ltd. (Hose Dairy). *Fourth* (£1) to Scalford Dairy, Ltd.

CLASS 82.—CHEDDAR TRUCKLES (6 Cheeses). Open only to Dairy Farmers. (Factors or Factories are not eligible to compete.)—*First* (£4) to L. F. Read. *Second* (£3) to R. A. Perry. *Third* (£2) to W. Cole. *Fourth* (£1) to W. Mathie. *Fifth* (£1) to N. Osborne. *Sixth* (£1) to S. McCollm.

- CLASS 83.—CHEDDAR (2 Cheeses, not less than 40 lbs. each). Open only to Dairy Farmers. (Factors or Factories are not eligible to compete.)—*First* (£6) to S. McColm. *Second* (£4) to J. B. Crawford. *Third* (£3) to W. Mathie. *Fourth* (£2) to A. Cochran. *Fifth* (£1) to J. C. Bryant. *Sixth* (£1) to F. J. Cochran. *Seventh* (£1) to W. Cole. *Eighth* (£1) to A. H. Hunt. *Ninth* (£1) to A. Duckett. *Tenth* (£1) to R. A. Perry.
- CLASS 84.—CHEDDAR AND CHEDDAR TRUCKLES (Long Keeping) (4 Cheeses, not less than 10 lbs. each made on or before 30th June, 1938). Open only to Dairy Farmers. (Factors or Factories are not eligible to compete.)—*First* (£7) to N. Osborne. *Second* (£5) to S. McColm. *Third* (£4) to John P. Hunter. *Fourth* (£3) to James P. Hunter.
- CLASS 85.—CHEDDAR (6 Cheeses). Open only to Dairy Farmers. (Factors or Factories are not eligible to compete.)—*First* (£12 and Silver Medal) to S. McColm. *Second* (£10) to W. Cole. *Third* (£7) to A. Duckett. *Fourth* (£5) to F. J. Cochran. *Fifth* (£1) to L. F. Read. *Sixth* (£1) to Sir E. O. McTaggart Stewart, Bart. *Seventh* (£1) to S. T. White. *Eighth* (£1) to A. J. Douglas. *Ninth* (£1) to N. Osborne. *Tenth* (£1) to J. & R. Stevenson.
- CLASS 86.—FACTORY CHEDDAR. For the best exhibit of Factory Cheese, to be manufactured at and exhibited by a recognised Cheese Factory dealing with a minimum of 500 gallons of milk daily in the United Kingdom. 6 Cheeses of not less than 28 lbs. each (any variety).—*First* (£6) to Scottish Co-operative Wholesale Society, Ltd. *Second* (£4) to Scottish Milk Marketing Board (Mauchline Branch). *Third* (£2) to Scottish Milk Marketing Board (Dalbeattie Branch). *Fourth* (£1) to Milk Marketing Board (Sturminster-Newton). *Fifth* (£1) to Scottish Milk Marketing Board (Galloway Branch). *Sixth* (£1) to Fenwick Farmers, Ltd.
- CLASS 87.—SMALL CHEDDAR (4 Cheeses, made at home, not exceeding 10 lbs. each). Open to Pupils who have received instruction at an Agricultural College or Farm School during 1936, 1937 or 1938.—*First* (£3) to Miss Board. *Second* (£2) to H. W. Greenhill. *Third* (£1) to Miss E. Browning. *Fourth* (£1) to F. Baker. *Fifth* (£1) to Miss B. Shield. *Sixth* (£1) to David Box.
- CLASS 88.—CHEDDAR (2 Cheeses, not less than 60 lbs. each, Coloured or Uncoloured). Open to makers only, and produced in the British Empire (overseas), excluding Eire.—*First* (Gold Medal) to Pine Bush Co-operative Dairy Co., Invercargill, New Zealand. *Second* (Silver Medal) to Otahuti Co-operative Dairy Co., Invercargill, New Zealand. *Third* (Bronze Medal) to Pahiia Co-operative Dairy Co., Southland, New Zealand.
- CLASS 89.—CHESHIRE (6 Cheeses). Open only to Dairy Farmers. (Factors or Factories are not eligible to compete.)—*First* (£12) to J. H. Bennion. *Second* (£8) to A. E. Walley. *Third* (£5) to T. Walker. *Fourth* (£4) to J. D. Goodwin. *Fifth* (£1) to J. Davies. *Sixth* (£1) to F. M. Walley.
- CLASS 90.—CHESHIRE (4 Coloured Cheeses, not less than 40 lbs. each). Open only to Dairy Farmers. (Factors or Factories are not eligible to compete.)—*First* (£7) to A. E. Walley. *Second* (£4) to H. Barnett. *Third* (£3) to A. Blake. *Fourth* (£2) to T. E. Beckett. *Fifth* (£1) to J. D. Goodwin. *Sixth* (£1) to J. Davies. *Seventh* (£1) to E. Evans.
- CLASS 91.—CHESHIRE (4 Uncoloured Cheeses, not less than 40 lbs. each). Open only to Dairy Farmers. (Factors or Factories are not eligible to compete.)—*First* (£6) to W. H. Hobson. *Second* (£4) to G. Walley. *Third* (£2) to T. E. Beckett. *Fourth* (£1) to A. Blake.
- CLASS 92.—CHESHIRE (Long Keeping) (4 Coloured or Uncoloured Cheeses, not less than 40 lbs. each). Made on or before 30th June, 1938. Open only to Dairy Farmers. (Factors or Factories are not eligible to compete.)—*First* (£7) to W. H. Hobson. *Second* (£5) to P. P. Walley.

- Third* (£4) to T. E. Beckett. *Fourth* (£3) to P. Noden. *Fifth* (£1) to T. W. Young.
- CLASS 93.—CHESHIRE (4 Cheeses, not less than 40 lbs. each). Open only to those who have never won a first or second Prize for Cheshire Cheese at any Show of the British Dairy Farmers' Association. Open only to Dairy Farmers. (Factors or Factories are not eligible to compete.)—*First* (£5) to J. N. Bourne. *Second* (£3) to J. D. Goodwin. *Third* (£2) to J. C. Barnett. *Fourth* (£1) to J. H. Bennion. *Fifth* (£1) to W. J. Hall. *Sixth* (£1) to H. E. Higgins.
- CLASS 94.—CHESHIRE, NATIONAL MARK (4 Cheeses, not less than 40 lbs. each). *First* (£6) to J. H. Bennion. *Second* (£4) to G. Walley. *Third* (£2) to T. E. Beckett. *Fourth* (£1) to Milk Marketing Board (Wem). *Fifth* (£1) to J. D. Goodwin. *Sixth* (£1) to J. W. Fearnall. *Seventh* (£1) to W. Fair.
- CLASS 95.—FACTORY CHESHIRE. For the best Exhibit of Factory Cheese, to be manufactured at and exhibited by a recognised Cheese Factory dealing with a minimum of 500 gallons of milk daily in the United Kingdom. 6 Cheeses of not less than 28 lbs. each (any variety).—*First* (£6) to Cookson's (Minshall), Ltd. *Second* (£4) to Milk Marketing Board (Wem). *Third* (£2) to Cooke Bros. (Tattenhall), Ltd. *Fourth* (£1) to H. Heald, Ltd. *Fifth* (£1) to Sumners Dairies, Ltd.
- CLASS 96.—SMALL CHESHIRE (4 Cheeses, made at home, not exceeding 10 lbs. each). Open to Pupils who have received instruction at an Agricultural College or Farm School during 1936, 1937 or 1938.—*First* (£3) to Miss M. Hollins. *Second* (£2) to Miss M. Denson. *Third* (£1) to Miss B. Williams. *Fourth* (£1) to A. P. Sadler. *Fifth* (10s.) to N. Hall. *Sixth* (10s.) to Miss G. Lorenzen.
- CLASS 97.—AYRSHIRE DUNLOPS (4 Cheeses, from 40 lbs. to 60 lbs. each). *First* (£6) to S. McColm. *Second* (£4) to John P. Hunter. *Third* (£2) to John Sloan. *Fourth* (£1) to D. Gilchrist. *Fifth* (£1) to Thomas Ross.
- CLASS 98.—LEICESTER (2 Cheeses).—*First* (£4) to F. W. Tomlinson. *Second* (£3) to J. O. Burchall. *Third* (£2) to Ann's Farmhouse, Ltd.
- CLASS 99.—LANCASHIRE (2 Cheeses, not less than 30 lbs. each). Open only to Dairy Farmers. (Factors or Factories are not eligible to compete.)—*First* (£4) to J. Lawrenson. *Second* (£3) to W. Walmsley. *Third* (£2) to J. Spencer. *Fourth* (£1) to W. D. Bradley.
- CLASS 100.—LANCASHIRE (Long Keeping) (2 Cheeses, not less than 30 lbs. each, made on or before 30th June, 1938). Open only to Dairy Farmers. (Factors or Factories are not eligible to compete.)—*First* (£5) to J. Lawrenson. *Second* (£4) to J. Cowpe. *Third* (£3) to J. G. Harrison. *Fourth* (£2) to H. Whittingham.
- CLASS 101.—DERBY (4 Uncoloured Cheeses, not less than 25 lbs. each).—*First* (£4) to Express Dairy Co. *Second* (£3) to Midland Agricultural College. *Third* (£2) to Ann's Farmhouse, Ltd.
- CLASS 102.—DOUBLE GLOUCESTER (4 Cheeses, from 26 lbs. to 30 lbs. each, total weight not to exceed 120 lbs.).—*First* (£4) to S. T. White. *Second* (£3) to N. Osborne. *Third* (£2) to R. A. Perry. *Fourth* (£1) to T. Darden.
- CLASS 103.—SINGLE GLOUCESTER (4 Cheeses, from 13 lbs. to 15 lbs. each, total weight not to exceed 60 lbs.).—*First* (£4) to S. T. White. *Second* (£3) to T. Darden. *Third* (£2) to Mrs. A. Browning. *Fourth* (£1) to H. H. Pickford.
- CLASS 104.—CARRPHILLY (4 Cheeses, not exceeding 8 lbs. each).—*First* (£4) to West of England Creamery. *Second* (£3) to Dried Milk Products, Ltd. *Third* (£2) to W. H. Amesbury. *Fourth* (£1) to R. G. Mapstone. *Fifth* (£1) to Kraft Dairies, Ltd.

- CLASS 105.—WENSLEYDALE (12 Cheeses, not exceeding 1 lb. each).—*First* (£2) to A. Rowntree & Sons, Ltd. *Second* (£1) to Miss B. J. Mudd.
- CLASS 106.—WENSLEYDALE (White) (6 Flat Cheeses, not less than 8 lbs. and not exceeding 25 lbs. each).—*First* (£2) to J. M. Nuttall & Co., Ltd. *Second* (£1 10s.) to A. Rowntree & Sons, Ltd.
- CLASS 107.—SMALL HARD PRESSED (Long Keeping) (4 Cheeses, not less than 2 lbs. and not exceeding 8 lbs. each).—*First* (£5) to J. Davies. *Second* (£3) to F. Portch. *Third* (£2) to P. H. Walley. *Fourth* (£1) to S. T. White. *Fifth* (£1) to T. W. Young. *Sixth* (£1) to T. Durden.
- CLASS 108.—SMALL HARD PRESSED (Quick Ripening) (4 Cheeses, not less than 2 lbs. and not exceeding 8 lbs. each).—*First* (£5) to N. Osborne. *Second* (£3) to T. E. Beckett. *Third* (£2) to P. H. Walley. *Fourth* (£1) to F. Portch. *Fifth* (£1) to A. E. Walley. *Sixth* (£1) to T. Durden.
- CLASS 109.—SMALL HARD PRESSED (4 Cheeses, not to exceed 2 lbs. each).—*First* (£2) to T. E. Beckett. *Second* (£1) to F. Portch. *Third* (15s.) to Cookson's (Minshull), Ltd. *Fourth* (10s.) to A. E. Walley. *Fifth* (10s.) to W. Fair.
- CLASS 110.—INTER-COUNTY COMPETITION for the Best Collection of Cheeses made by persons who have received instruction in Cheesemaking at a County Council Cheese School.—*First* (£8 and Shield) to Gloucestershire. *Instructress*: Miss A. Colnett. *Competitors*: J. Williams, B. Shield, E. Browning and R. Pain. *Second* (£6) to Denbighshire. *Instructor*: Isaac Jones. *Competitors*: Miss M. E. Hughes, Miss D. W. Jones, Miss J. Thomas and Cyril Pugh. *Third* (£4) to Devonshire. *Instructress*: Miss E. Bray. *Competitors*: F. Coleman, Mrs. Edwards, Miss M. Edwards and Miss B. Toogood. *Fourth* (£3) to Wiltshire. *Instructor*: A. C. Bull. *Competitors*: Miss F. Baker, Rex Pickford, Miss N. White and David Box.
- CLASS 111.—SWEET CREAM CHEESE, made from pure Cream only. No milk or Curd to be added (6 Cheeses of approximately 4 ozs. each).—*First* (£1) to Miss M. W. Gwennap. *Second* (15s.) to Mrs. N. E. Mellor. *Third* (10s.) to Hammett's Dairies, Ltd.
- CLASS 112.—UNRIPENED SOFT CHEESE, other than Cream Cheese made direct from Milk (4 Cheeses of approximately 8 ozs. each).—*First* (£1) to Monmouthshire Institute of Agriculture. *Second* (15s.) to Miss R. James. *Third* (10s.) to J. & T. Cash.

COLLECTION OF PRODUCE.

- CLASS 113.—Open only to individual Women's Institutes. To consist of 1 lb. Fresh Butter; 1 Trussed Fowl; 8 ozs. of Cream (raw or scalded); 8 ozs. Cream Cheese (either in two packets of 4 ozs. each, or one packet of 8 ozs.) and 1 doz. Eggs. The Collection to be packed in a box and sent to the Show by Parcel Post.—Cancelled.

BACON.

Cups, Open only to Bacon Pig Classes.

- THE "C. & T. HARRIS (CALNE), LTD." PERPETUAL CHALLENGE CUP (presented by MESSRS. C. & T. HARRIS (CALNE), LTD.), for the four best sides of Wiltshire Bacon in any one entry in Classes 114, 115, 116 or 117. Awarded to St. Luke's Hospital (Large White).
- THE "WHITLEY" CHALLENGE CUP, value 20 Guineas (presented by the late MR. S. R. WHITLEY), for the best exhibit in Class 114. Awarded to St. Luke's Hospital (Large White).

THE "BEALE" CHALLENGE CUP, value 20 Guineas (presented by CAPT. B. P. BEALE, M.C., for the best exhibit in Class 115. Awarded to C. L. Coxon (Welsh).

THE "BLEDISLOE" BACON CHALLENGE CUP, value 20 Guineas (presented by VISCOUNT BLEDISLOE, P.C., G.C.M.G., K.B.E.), for the best exhibit in Class 116. Awarded to A. E. Law (Large White and Middle White).

THE "WILLS" PERPETUAL CHALLENGE CUP, value £25 (presented by CAPT. D. M. WILLS) for the best Large White \times Large Black exhibit in Class 116. Awarded to Miss J. K. B. Little.

THE "PIG RECORDING" CHALLENGE CUP, value 20 Guineas (presented by Mr. WILLIAM DAVIDSON, for the exhibit gaining the highest number of marks in Class 117, which reaches the standard of a First Class Award. Awarded to T. L. Ward (Large White and Large Black).

CLASS 114.—BACON PIGS.—Four pigs by a Registered Sire and out of a Registered Dam of the same Breed, to be entered by the Breed Society or Breeder.—*First* (£12) to St. Luke's Hospital (Large White). *Second* (£6) to J. C. Wilkerson (Large White). *Third* (£3) to F. A. Currey (Large White).

CLASS 115.—BACON PIGS (PEDIGREE). Two pigs by a Registered Sire out of a Registered Dam of the same Breed.—*First* (£5) to C. L. Coxon (Welsh). *Second* (£3) to J. White (Large White). *Third* (£2) to J. C. Wilkerson (Large White).

CLASS 116.—BACON PIGS (FIRST CROSS). Two pigs by a Pure-bred Sire and out of a Pure-bred Dam, the evidence required being the eligibility to register.—*First* (£5) to A. E. Law (Large White and Middle White). *Second* (£3) to Miss J. K. B. Little (Large White and Large Black). *Third* (£2) to H. Goodman (Large White and Lop-eared White).

CLASS 117.—BACON PIGS (RECORDED). Four pigs from the same litter. One parent of the litter must be pure-bred, the evidence required being the eligibility to register.—*First Class Awards* (£10 each) to Hertfordshire Institute of Agriculture (Large White) and T. L. Ward (Large White and Large Black).

CLASS 118.—FOUR SIDES OF BACON, suitable for the London Market. Produced in the British Empire (Overseas), excluding Eire. Open to Curers only.—*First* (Silver Medal) to Canada Packers, Ltd., Toronto, Canada. *Second* (Bronze Medal) to Burns & Co., Ltd., Prince Albert, Canada.

HAMS.

CLASS 119.—FOUR PALE DRIED HAMS (long cut, of Winter or Spring cure, not over 14 lbs. weight).—*First* (Silver Medal) and *Second* (Bronze Medal) to J. E. Downs & Sons.

CLASS 120.—FOUR PALE DRIED HAMS (long cut, of Winter or Spring cure, over 14 lbs. weight).—*First* (Silver Medal) to J. A. Hunter & Co., Ltd. *Second* (Bronze Medal) to J. E. Downs & Sons.

CLASS 121.—FOUR SMOKED HAMS (long cut, mild cured, not over ten weeks cured, not over 15 lbs. weight).—*First* (Silver Medal) and *Second* (Bronze Medal) to J. A. Hunter & Co., Ltd.

CLASS 122.—FOUR PALE DRIED HAMS (long cut, mild cured, not over ten weeks cured, over 15 lbs. weight).—*First* (Silver Medal) and *Second* (Bronze Medal) to J. A. Hunter & Co., Ltd.

CLASS 123.—SELLING CLASS FOR HAMS, ANY VARIETY. Two Hams.—*First* (£2), *Second* (£1) and *Third* (10s.) to J. A. Hunter & Co., Ltd.

BUTTER.

(Open to Makers only residing in any part of Great Britain or Ireland.)
Cup for 2 lb. Butter Classes.

CHAMPION CUP, value £10 10s. (presented by the CORPORATION OF THE CITY OF LONDON), for the best exhibit of Butter in Classes 102 to 109 inclusive. Awarded to Miss M. W. Gwennap.

CLASS 124.—SLIGHTLY SALTED, open only to farmers, their wives, sons and daughters who have never won a Prize in the Butter Classes at any of the Association's Shows. 2 lbs. in 1-lb. lumps (brick shape).—*First* (£3) to Miss G. G. Olde. *Second* (£2) to Miss J. B. Hutchings. *Third* (£1) to Miss E. H. Eustice. *Fourth* (10s.) to Miss M. D. Wearne. *Fifth* (5s.) to Mrs. L. Richards.

CLASS 125.—PERFECTLY FREE FROM SALT, the produce of Channel Islands Cattle and their Crosses. 2 lbs. in 1-lb. lumps (brick shape).—*First* (£3) to Mrs. J. Mogford. *Second* (£2) to Miss A. M. Ward. *Third* (£1) to Miss M. W. Gwennap. *Fourth* (10s.) to Mrs. Howard Palmer. *Fifth* (5s.) to Mrs. H. I. Pitman.

CLASS 126.—SLIGHTLY SALTED, the produce of Channel Islands Cattle and their Crosses. 2 lbs. in 1-lb. lumps (brick shape).—*First* (£3) to Mrs. J. Mogford. *Second* (£2) to Miss A. M. Ward. *Third* (£1) to Midland Agricultural College. *Fourth* (10s.) to Miss M. W. Gwennap. *Fifth* (5s.) to Mrs. Moore.

CLASS 127.—PERFECTLY FREE FROM SALT, the produce of Shorthorn and other Cattle and their Crosses (except Channel Islands and their Crosses). 2 lbs. in 1-lb. lumps (brick shape).—*First* (£3) to Mrs. J. Mogford. *Second* (£2) to Miss A. M. Ward. *Third* (£1) to Mrs. A. G. Dennis. *Fourth* (10s.) to Midland Agricultural College. *Fifth* (5s.) to J. P. Morgan.

CLASS 128.—SLIGHTLY SALTED, the produce of Shorthorn and other Cattle and their Crosses (except Channel Islands and their Crosses). 2 lbs. in 1-lb. lumps (brick shape).—*First* (£3) to Mrs. J. Mogford. *Second* (£2) to Miss A. M. Ward. *Third* (£1) to Midland Agricultural College. *Fourth* (10s.) to Miss I. G. Roach. *Fifth* (5s.) to J. P. Morgan.

CLASS 129.—SLIGHTLY SALTED, to be made from Scalded Cream only. 2 lbs. in 1-lb. lumps (brick shape).—*First* (£3) to Mrs. J. Mogford. *Second* (£2) to Mrs. A. G. Dennis. *Third* (£1) to Midland Agricultural College. *Fourth* (10s.) to Miss M. Tripp. *Fifth* (5s.) to Miss I. G. Roach.

CLASS 130.—PERFECTLY FREE FROM SALT, to be made from Scalded Cream only. 2 lbs. in 1-lb. lumps (brick shape).—*First* (£3) to Miss M. W. Gwennap. *Second* (£2) to Mrs. J. Mogford. *Third* (£1) to Miss A. M. Ward.

CLASS 131.—ESPECIALLY FOR KEEPING, slightly Salted. 2 lbs. in 1-lb. lumps (brick shape).—*First* (£3) to Miss M. W. Gwennap. *Second* (£2) to Miss A. M. Ward. *Third* (£1) to Mrs. J. Mogford. *Fourth* (10s.) to Mrs. A. G. Dennis. *Fifth* (5s.) to Miss M. M. Olde. *Sixth* (5s.) to Miss M. Tripp.

CLASS 132.—SLIGHTLY SALTED, made from Goats' Milk (butter colouring may be used). 1 lb. in $\frac{1}{2}$ -lb. lumps (brick shape).—*First* (£1 10s.) to Miss M. W. Harrison. *Second* (£1) to Miss V. W. Harrison. *Third* (10s.) to Miss E. M. Sheppard.

CLASS 133.—SALTED, in wooden boxes containing 12 1-lb. vegetable parchment wrapped bricks. Cartons are not allowed.—*First* (£3) to Garryspillane Creamery. *Second* (£2) to Scottish Milk Marketing Board (Mauchline). *Third* (£1) to Newport Co-operative Creamery. *Fourth* (10s.) to Scottish Milk Marketing Board (Galloway). *Fifth* (10s.) to Scottish Milk Marketing Board (Kirkcudbright). *Sixth* (10s.) to Miss N. Hutton.

CLASS 134.—UNSALTED, in wooden boxes containing 12 1-lb. vegetable parchment wrapped bricks. Cartons are not allowed.—*First* (£3) to Scottish Milk Marketing Board (Hogganfield). *Second* (£2) to Scottish Milk Marketing Board (Mauchline). *Third* (£1) to Milk Marketing Board (Newbury). *Fourth* (10s.) to Shanagolden Co-operative Dairy Society, Ltd. *Fifth* (10s.) to Boherlahan Co-operative Creamery.

CLASS 135.—SALTED, in bulk, in 28-lb. vegetable parchment lined wooden boxes.—*First* (£3) to Scottish Milk Marketing Board (Hogganfield). *Second* (£2) to Scottish Milk Marketing Board (Kircudbright). *Third* (£1) to Scottish Milk Marketing Board (Galloway). *Fourth* (10s.) to Milk Marketing Board (Camborne). *Fifth* (10s.) to Oola Co-operative Creamery, Ltd. *Sixth* (10s.) to Kilross Co-operative Dairy Society, Ltd.

CLASS 136.—SALTED, in bulk, in 56-lb. vegetable parchment lined wooden boxes. *First* (£3) to Milk Marketing Board (Camborne). *Second* (£2) to Scottish Milk Marketing Board (Mauchline). *Third* (£1) to Scottish Milk Marketing Board (Hogganfield). *Fourth* (10s.) to Glin Co-operative Society, Ltd. *Fifth* (10s.) to Oola Co-operative Creamery, Ltd. *Sixth* (10s.) to Boherlahan Co-operative Creamery.

CLASS 137.—TWO POUNDS, made up in the most attractive form for Table use. Scotch hands, moulds, &c., may be used for shaping the Butter (touching it directly by the human hand is prohibited). Exhibits, shown on a space 1 foot square, will be judged on quality as well as appearance.—*First* (£4) to Mrs. J. Mogford. *Second* (£2) to Miss D. Bainbridge.

CLASS 138.—FANCY OR ORNAMENTAL DESIGN, with foliage or other extraneous decoration.—*First* (£4) Disqualified. *Second* (£2) No Award. *Third* (£1) to Miss D. Bainbridge.

CLASS 139.—SALTED (Produced in the British Empire (Overseas), excluding Eire). One cube box containing not less than 56 lbs.—*First* (Gold Medal) to Maryborough Co-operative Dairy Association, Ltd., Kingarvy, Queensland, Australia. *Second* (Silver Medal) to Maryborough Co-operative Dairy Association, Ltd. (Mundubbera). *Third* (Bronze Medal) to Queensland Farmers' Co-operative Association, Ltd., Grantham, Queensland, Australia.

CLASS 140.—UNSALTED (Produced in the British Empire (Overseas), excluding Eire). One cube box containing not less than 56 lbs.—*First* (Gold Medal) to Downs Co-operative Dairy Association, Ltd., Jandowae Factory, Queensland, Australia. *Second* (Silver Medal) to Esk Co-operative Dairy Association, Ltd., Esk, Queensland, Australia. *Third* (Bronze Medal) to Maryborough Co-operative Dairy Association, Ltd., Maryborough Factory, Queensland, Australia.

CREAM.

Cup for Cream.

THE "B.D.F.A." CHALLENGE CUP, value £10 10s. (presented by the British Dairy Farmers' Association), for the best exhibit of Cream in Class 142. The Cup to be won three times, not necessarily in consecutive years, before becoming the exhibitor's absolute property. The Silver Medal of the Association will be presented to each year's winner of this Cup.—Awarded to Wilts United Dairies, Ltd. (Melksham).

CLASS 141.—CLOTTED CREAM, with a fat content of not less than 50 per cent. Open only to Wholesale Creameries and Factories.—*First* (£2 and Silver Medal) to C. & G. Prideaux, Ltd. (Evercreech). *Second* (£1) to C. & G. Prideaux, Ltd. (Motecombe). *Third* (10s.) to South Western Dairies, Ltd.

- CLASS 142.—CREAM. Each exhibit to contain one vessel of pasteurized cream with a fat content of not less than 50 per cent. and not more than 55 per cent.; one vessel of pasteurized, homogenized cream with a fat content of not less than 25 per cent. and not more than 30 per cent., and one vessel of pasteurized, homogenized cream with a fat content of not less than 15 per cent. and not more than 20 per cent. Open only to Wholesale Creameries and Factories.—*First* (£2) to Wilts United Dairies, Ltd. (Melksham). *Second* (£1) to Wilts United Dairies, Ltd. (Buckingham). *Third* (10s.) to Hammett's Dairies, Ltd.
- CLASS 143.—CLOTTED CREAM, with a fat content of not less than 50 per cent. Not open to Wholesale Creameries and Factories.—*First* (£2 and Silver Medal) to Miss M. D. Wearne. *Second* (£1) to G. Wills. *Third* (10s.) to Mrs. F. G. Dolbear. *Fourth* (10s.) to S. E. Butler.
- CLASS 144.—CREAM, OTHER THAN CLOTTED, with a fat content of not less than 50 per cent. and not more than 55 per cent. Not open to Wholesale Creameries and Factories.—*First* (£2 and Silver Medal) to S. E. Butler. *Second* (£1) to G. Pegrum & Sons. *Third* (10s.) to Miss I. G. Roach.

BOTTLED AND CANNED FRUITS, FRUIT JUICES, VEGETABLES AND JAMS.

THE BRITISH DAIRY FARMERS' ASSOCIATION'S SILVER MEDAL for the best exhibit in Classes 145 to 155.—Awarded to Miss E. M. Wing for Bottled Vegetables.

- CLASS 145.—SIX BOTTLES OF SOFT FRUIT, of not less than 4 Varieties.—*First* (£2) to Miss E. M. Wing. *Second* (£1) to Miss M. Clark.
- CLASS 146.—SIX BOTTLES OF STONE FRUIT, of not less than 4 Varieties.—*First* (£2) to Miss E. M. Wing. *Second* (£1) to Mrs. D. Gee. *Third* (10s.) to Miss M. Clark.
- CLASS 147.—THREE BOTTLES OF SOFT FRUIT, distinct.—*First* (£1) to Miss E. A. Webb. *Second* (10s.) to Miss M. Clark.
- CLASS 148.—THREE BOTTLES OF STONE FRUIT, distinct.—*First* (£1) to Miss E. A. Webb. *Second* (10s.) to Miss M. Clark. *Third* (7s. 6d.) to Miss F. M. Besley.
- CLASS 149.—THREE BOTTLES OF STONE OR SOFT FRUIT, distinct.—*First* (£1) to Mrs. E. Parker. *Second* (10s.) No Award. *Third* (7s. 6d.) to Miss M. Clark.
- CLASS 150.—THREE CANS OF STONE OR SOFT FRUIT, distinct.—*First* (£1) to Miss E. A. Webb. *Second* (10s.) to Mrs. Ingoldby. *Third* (7s. 6d.) to Miss M. E. Rivers.
- CLASS 151.—THREE BOTTLES OF PURE NATURAL FRUIT JUICES (not exceeding approximately 12 ozs.), of any variety, free from any synthetic ingredient and produced from fruit grown in the United Kingdom. Permitted preservative allowed.—*First* (£2) to Miss M. Clark. *Second* (£1) to Mrs. S. Roberts. *Third* (10s.) to Miss M. E. Rivers.
- CLASS 152.—SIX BOTTLES OF VEGETABLES, of not less than 4 Varieties (Tomatoes admitted).—*First* (£2) to Miss E. M. Wing. *Second* (£1) to Mrs. D. Gee. *Third* (10s.) to Miss J. Larter.
- CLASS 153.—THREE BOTTLES OF VEGETABLES, distinct.—*First* (£1) to Mrs. E. Parker. *Second* (10s.) to Mrs. B. Jelley. *Third* (7s. 6d.) to Miss M. Clark.

CLASS 154.—THREE CANS OF VEGETABLES, distinct.—*First* (£1) to Mrs. Ingoldby. *Second* (10s.) to Miss E. A. Webb. *Third* (7s. 6d.) to Miss M. E. Rivers.

CLASS 155.—THREE JARS OF JAM (1 lb. each), dissimilar, any variety. Glass Jars only to be used.—*First* (£1) to Mrs. E. Parker. *Second* (10s.) to Mrs. W. M. Dalton. *Third* (7s. 6d.) to Miss M. E. Rivers.

CLASS 156.—CO-OPERATIVE EXHIBIT OF BOTTLED FRUITS (Preserved in plain water or syrup), VEGETABLES, JAMS, FRUIT JELLIES, PICKLES AND CHUTNEYS. Open only to individual Women's Institutes. Each Exhibit to be the work of not less than four Members. To consist of 3 bottles of Soft Fruit, 3 bottles of Stone Fruit, 3 bottles of Vegetables, 3 1-lb. jars of Jam or Fruit Jelly, 3 jars of Pickles or Chutney. All exhibits to be shown in glass containers and to be of not less than two varieties.—*First* (£5) to Wing Women's Institute. *Second* (£3) to Belton Women's Institute. *Third* (£2) to Frensham Women's Institute.

HONEY, WAX. &c.

CLASS 157.—SIX JARS OF EXTRACTED LIGHT-COLOURED HONEY, 1 lb. each, approximate weight.—*First* (£1) to H. J. Crocker. *Second* (15s.) to H. Pilditch. *Third* (12s. 6d.) to W. Slinger. *Fourth* (10s.) to S. Rowles.

CLASS 158.—SIX JARS OF EXTRACTED MEDIUM-COLOURED HONEY, excluding Heather Honey, 1 lb. each, approximate weight.—*First* (£1) to J. Carver. *Second* (15s.) to W. Preston. *Third* (12s. 6d.) to R. Edmondson.

CLASS 159.—SIX JARS OF EXTRACTED DARK-COLOURED HONEY, excluding Heather Honey, 1 lb. each, approximate weight.—*First* (£1) to N. F. James. *Second* (15s.) to H. J. Crocker. *Third* (12s. 6d.) to W. J. Goodrich. *Fourth* (10s.) to J. Carver.

CLASS 160.—SIX JARS OF GRANULATED HONEY, excluding Heather Honey, 1 lb. each, approximate weight.—*First* (£1) to R. Edmondson. *Second* (15s.) to W. Slinger. *Third* (12s. 6d.) to W. C. Robinson. *Fourth* (10s.) to W. J. Goodrich.

CLASS 161.—SIX JARS OF EXTRACTED HEATHER HONEY, 1 lb. each approximate weight.—*First* (£1) to Mrs. P. Lamb. *Second* (15s.) to F. J. Rutherford. *Third* (12s. 6d.) to R. N. Cook. *Fourth* (10s.) to R. Edmondson.

CLASS 162.—SIX JARS OF LIGHT, MEDIUM, DARK OR GRANULATED HONEY, three each of 1 lb. (squat) and $\frac{1}{2}$ -lb. (standard jars as approved by the Ministry of Agriculture and Fisheries). National Mark Labels to be attached. Open only to authorised packers of National Mark Honey.—*First* (£2) to J. Salt. *Second* (£1 10s.) and *Third* (£1) to W. J. Goodrich. *Fourth* (15s.) to N. F. James.

CLASS 163.—THREE SECTIONS OF HONEY, packed in standard cartons (approved by the Ministry of Agriculture and Fisheries) or cellophane wrappers. National Mark Labels to be attached. Open only to authorised packers of National Mark Honey.—*First* (£2) and *Second* (£1 10s.) to H. S. Barter. *Third* (£1) to W. J. Goodrich. *Fourth* (15s.) to N. F. James.

CLASS 164.—SIX SECTIONS OF COMB HONEY, excluding Heather Honey (size $4\frac{1}{2}$ by $4\frac{1}{2}$), approximate weight 1 lb. each.—*First* (£1) to H. S. Barter. *Second* (15s.) to W. J. Goodrich. *Third* (10s.) to F. J. Rutherford.

CLASS 165.—SIX SECTIONS OF HEATHER HONEY (size $4\frac{1}{2}$ by $4\frac{1}{2}$) approximate weight 1 lb. each.—*First* (£1) to N. F. James. *Second* (15s.) to F. J. Rutherford. *Third* (10s.) to H. S. Barter.

- CLASS 166.—DISPLAY OF HONEY AND HONEY PRODUCTS, of any year staged in the most attractive form on a space 3 feet by 3 feet and height not to exceed 4 feet above the Table. The Products not including Mirrors or Sheet Glass to be above 50 lbs. but not exceeding 100 lbs. in weight. No flowers allowed.—*First* (£5) to H. S. Barter. *Second* (£2) to W. Preston. *Third* (£1) to Mr. P. Lamb.
- CLASS 167.—ONE SHALLOW-FRAME OF COMB HONEY, suitable for extracting.—*First* (15s.) to W. J. Goodrich. *Second* (10s.) to H. S. Barter. *Third* (7s. 6d.) to N. F. James.
- CLASS 168.—EXHIBIT OF NOT LESS THAN 2 LBS OF BEES' WAX, in not more than two cakes, the produce of the Exhibitor's apiary; extracted and cleaned by the Exhibitor or his assistants.—*First* (15s.) to H. S. Barter. *Second* (10s.) to H. Pilditch.
- CLASS 169.—INTERESTING AND INSTRUCTIVE EXHIBIT OF A PRACTICAL OR SCIENTIFIC NATURE CONNECTED WITH BEE CULTURE, not mentioned in the foregoing classes.—*First* (15s.) to H. S. Barter for showing how inadvisable it is to use old combs in the hive. *Second* (10s.) to S. Wolsteneroff for Apparatus for perforating the mid-rib of the comb prior to the extraction of heather honey.

INVENTIONS, &c.

- CLASS 170.—ANY NEW APPARATUS OR INVENTION relating to the Dairy Industry, or one showing distinct and practical improvement, especially as to saving of labour, not eligible for competition in any other Class and not previously having received an award at any Show of the British Dairy Farmers' Association.—Silver Medals to H. King & Son (Dulwich), Ltd., for Hand Aluminium Capping Machine; and Perkins Clean Milk Equipment, Ltd., for Duo Bottle Washing Machine. Bronze Medal to Young & Co. (Westminster), Ltd., for "Hale" Bull Control and Self-Exerciser.
- CLASS 171.—OIL OR GAS-FIRED OUTFITS with chest of not less than 15 cubic feet capacity.—*First* (£3 and Silver Medal) to Perkin's Clean Milk Equipment, Ltd., for "Paramount" Gas Boiler with Chest. *Second* (£2 and Bronze Medal) to Dairy Supply Co., Ltd., for "Desco" Gas-Fired 15-lb. Pressure Sterilizing Outfit.
- CLASS 172.—ELECTRICALLY HEATED OUTFITS with chest of not less than 15 cubic feet capacity. In this type of plant the provision of hot water may be separate.—*First* (£3 and Silver Medal) to General Electric Co., Ltd., for New Improved Electric Dairy Sterilizing Chest. *Second* (£2 and Bronze Medal) to J. W. Woolley & Co., Ltd., for Clifton Electric Sterilizer.
- CLASS 173.—ANY NEW APPARATUS OR INVENTION relating to the Poultry Industry, or one showing distinct and practical improvement, especially as to saving of labour, not eligible for competition in any other Class and not previously having received an award at any Show of the British Dairy Farmers' Association.—Silver Medal to R. J. Patchett, Ltd., for "Eggsellsior" Single Hen-Laying Battery; and Secura Incubator Co., Ltd., for Secura New Hot-air Motor. Bronze Medals to Papworth Industries for Papworth Mammoth All-Electric Incubator; D. McMaster & Co., for "Master" 100-Size Fold Brooder; Curfew Electric Appliances, for Curfew All-Metal Electric and Oil Chick Tier Brooder; and Sawyer's Manufacturing Co., Ltd., for 100-Size Chick Brooder.

JUNKET-MAKING CONTESTS.

- THE "DAILY MAIL" PERPETUAL CHALLENGE BOWL (presented by the PROPRIETORS OF THE "DAILY MAIL") for the Champion Junketmaker.—Awarded to Miss. W. M. Sweetland.
- CLASS 174.—FOR THE BEST JUNKET MADE WITH MILK. Open only to those who have never won a First Prize for Junket-Making at any Shows of the British Dairy Farmers' Association.

SECTION A.—*First* (£2) to Miss P. Peer. *Second* (£1) to Miss E. D. Richards. *Third* (10s.) to Miss E. Browning. *Fourth* (10s.) to Miss D. W. Jones.

SECTION B.—*First* (£2) to Miss O. Eustice. *Second* (£1) to Miss J. Rorewell. *Third* (10s.) to Miss R. P. Davies. *Fourth* (10s.) to Miss J. M. Reeves.

SECTION C.—*First* (£2) to Miss M. Lloyd. *Second* (£1) to Miss B. Simpson. *Third* (10s.) to Miss I. Gwennap. *Fourth* (10s.) to Miss E. I. Eustice.

SECTION D.—*First* (£2) to Miss M. W. Gwennap. *Second* (£1) to Miss G. A. Figg. *Third* (10s.) to Miss M. E. Sandereock. *Fourth* (10s.) to Miss D. M. Powell.

CLASS 175.—CHAMPION JUNKET-MAKING CONTEST. Open to First Prize Winners in the Sections of the preceding Class and to First Prize Winners at previous Shows of the British Dairy Farmers' Association, Champions of any year excepted.—*First* (£3 and Silver Medal) to Miss W. M. Sweetland. *Second* (£2 and Bronze Medal) to Miss P. Peer. *Third* (£1 and Bronze Medal) to Miss M. Julian.

BUTTER-MAKING CONTESTS.

THE "DESBOROUGH" PERPETUAL CHALLENGE CUP (presented by LORD DESBOROUGH, K.G., G.C.V.O.), for the Champion Butter-maker.—Awarded to Miss M. M. Olde.

CLASS 176.—Open to those who have never won a Prize prior to 22nd August, 1938, at any Show, wherever held.

SECTION A.—*First* (£4 and Silver Medal) to Miss E. Hocking. *Second* (£3) to Miss B. Pullin. *Third* (£2) to Miss M. S. Evans. *Fourth* (£1) to Miss D. Hosking. *Fifth* (10s.) to Miss M. Lloyd.

SECTION B.—*First* (£4 and Silver Medal) to Miss N. Williams. *Second* (£3) to J. W. Versfeld. *Third* (£2) to Miss J. M. Reeves. *Fourth* (£1) to Miss R. P. Davies. *Fifth* (10s.) to Miss J. K. H. Lucas.

CLASS 177.—Open to Students who have attended Classes at the British Dairy Institute, Reading, for not less than one month, during the past two years.—*First* (£4 and Silver Medal) to J. W. Versfeld. *Second* (£3) to Miss J. K. H. Lucas. *Third* (£2) to Miss B. Thornborrow. *Fourth* (£1) to Miss C. Vernon. *Fifth* (10s.) to Miss M. Murray.

CLASS 178.—Open only to Men and Women who have not won a First Prize at any Show of the British Dairy Farmers' Association since 1934.

SECTION A.—*First* (£4 and Silver Medal) to Miss P. Peer. *Second* (£3) to Miss M. Powell. *Third* (£2) to Miss E. D. Richards. *Fourth* (£1) to Miss V. M. Heywood. *Fifth* (10s.) to Miss M. Tapp.

SECTION B.—*First* (£4 and Silver Medal) to Miss B. Simpson. *Second* (£3) to Miss D. Smith. *Third* (£2) to Miss E. I. Eustice. *Fourth* (£1) to Miss I. Gwennap. *Fifth* (10s.) to Miss J. Colwill.

SECTION C.—*First* (£4 and Silver Medal) to Miss F. Lewis. *Second* (£3) to Miss E. H. Eustice. *Third* (£2) to Miss D. M. Powell. *Fourth* (£1) to J. C. Rees. *Fifth* (10s.) to Miss A. W. James.

SECTION D.—*First* (£4 and Silver Medal) to Miss O. Eustice. *Second* (£3) to Miss G. G. Olde. *Third* (£2) to Miss P. Milliehip. *Fourth* (£1) to Miss N. Heath. *Fifth* (10s.) to Miss M. Julian.

SECTION E.—*First* (£4 and Silver Medal) to Miss M. M. Olde. *Second* (£3) to Miss D. Edwards. *Third* (£2) to Miss K. Crow. *Fourth* (£1) to Mrs. E. B. Weeks. *Fifth* (10s.) to Miss V. Jones.

CLASS 179.—CHAMPION CONTEST. Open to Winners of First Prizes in the Sections of preceding Classes and at any of the last three Shows of the British Dairy Farmers' Association, Champions of any year excepted. —*First* (£5 and Gold Medal) to Miss M. M. Olde. *Second* (£3 and Silver Medal) to Miss P. Peer. *Third* (£1 and Bronze Medal) to Miss B. Simpson.

MILKERS' CONTESTS.

CLASS 180.—Open to Men and Women of 18 years and over.

SECTION A.—*First* (£5) to Miss E. N. Davall. *Second* (£4) to Miss B. Jones. *Equal Thirds* (£2 each) to R. Head and Miss B. Davies. *Fifth* (10s.) to E. Jones.

SECTION B.—*First* (£5) to R. E. Billington. *Second* (£4) to Miss B. Evans. *Third* (£3) to G. Hiscock. *Fourth* (£1) to Miss K. Evans. *Fifth* (10s.) to Miss N. Williams.

SECTION C.—*First* (£5) to Miss R. M. Lees. *Second* (£4) to Miss M. Harries. *Third* (£3) to W. Jackson. *Fourth* (£1) to Miss W. M. Sweetland. *Fifth* (10s.) to G. P. Maddever.

SECTION D.—*First* (£5) to Miss J. Philip. *Second* (£4) to R. Phillips. *Third* (£3) to Miss C. Owen. *Fourth* (£1) to J. E. Roberts. *Fifth* (10s.) to Miss P. Willcox.

CLASS 181.—Open to Boys and Girls under 18 years.—*First* (£5) to A. P. Retter. *Second* (£4) to Miss M. J. Evans. *Equal Thirds* (£2 each) to Miss J. Rogers and Miss M. Jones. *Fifth* (10s.) to Miss J. Davies.

CLASS 182.—Open only to Herdsmen attending Cattle at the 1938 Dairy Show.—*First* (£4) to G. T. Herbert. *Equal Seconds* (£2 10s. each) to F. N. Pugh and R. Powley. *Fourth* (£1) to J. E. Durrant. *Fifth* (10s.) to O. A. Lee. *Sixth* (5s.) to W. D. Romeling.

CLASS 183.—CHAMPION CONTEST. Open to Winners of First Prizes in the sections of Class 180 and Classes 181 and 182. Also to First Prize Winners at the 1937 Dairy Show of the British Dairy Farmers' Association. Champions of any year excepted.—*First* (Cup, Gold Medal and £2) to Miss J. Philip. *Second* (£1 and Silver Medal) to G. T. Herbert. *Third* (£1 and Bronze Medal) to R. E. Billington.

COW JUDGING CONTEST.

CLASS 184.—Open to Teams of Students from Agricultural Colleges, Farm Institutes, and/or County Councils. *Prize* (British Dairy Farmers' Association's Challenge Cup) to Studley Agricultural College. Silver Medals to Miss R. R. Davies, Miss C. B. Haine and Miss R. Nix—Members of the winning team. Bronze Medals to Miss A. Ede, J. Baker, and R. Williams—team of Shropshire County Council placed Second.

HORTICULTURAL SECTION.

Gold Medals to John Waterer Sons & Crisp, Ltd., for Trees and Flowering Shrubs; Stuart Ogg, for Dahlias; and Blackmore & Langdon, for Begonias and Herbaceous Flowers. Silver Medals to Brown & Such, Ltd., for Dahlias; L. R. Russell, Ltd., for Clematis and Ornamental Trees and Shrubs; and Allwood Bros., for Carnations. Bronze Medals to W. E. Th. Ingverson, Ltd., for Rock Garden; Carter Page & Co., Ltd., for Dahlias; and C. Gregory & Son, Ltd., for cut Rose Blooms.

Open only to Standholders.

THE "FARMER AND STOCKBREEDER" PERPETUAL CHALLENGE TROPHY AND GOLD MEDAL (presented by the PROPRIETORS of the "FARMER AND STOCKBREEDER") for the best Trade Stand in the Show. Stand design and attractiveness of display will be the main points.—Awarded to Dairy Supply Co., Ltd. Silver Medals to Boulton & Paul, Ltd., and General Electric Co., Ltd. Bronze Medal to Spillers, Ltd.

LIST OF JUDGES AT THE 1938 DAIRY SHOW.

MILKING TRIALS.

S. BARTLETT, National Institute for Research in Dairying, Shinfield.
T. J. DRAKELEY, 28, Russell Square, London, W.C. 1.
J. MACKINTOSH, National Institute for Research in Dairying, Shinfield.
E. W. S. PRESS, 91, Cricklewood Lane, London, N.W. 2.

BUTTER TESTS.

R. H. EVANS, Barclays Bank Chambers, Pwllheli, N. Wales.
J. G. W. STAFFORD, Midland Agricultural College, Sutton Bonington.
M. GRIFFITH, Pwllpeiran, Devil's Bridge, Cardiganshire.

"BLEDISLOE" CHALLENGE TROPHY.

A. WRIGHTMAN, Middle Herrington Dairy Farm, Durham.

SUPREME INDIVIDUAL CHAMPIONSHIP CHALLENGE TROPHY.

W. NIXON, Great Pinley, Claverdon, Warwick.

CATTLE.

Shorthorn.

E. C. J. ALDAY, Fotheringhay Manor, Peterborough.
A. H. FOX-BROCKBANK, The Croft, Kirksanton, Millom.

Lincolnshire Red Shorthorn.

T. H. B. FRESHNEY, Little Milton, Oxford.

British Friesian.

J. R. McCAW, Home Farm, Douneside, Tarland, Aberdeen.
F. LOFTUS, JR., Fir Trees Farm, Salwick, Preston.

South Devon.

J. HENDY, Alston Farm, Holbeton, S. Devon.

Red Poll.

HIS GRACE THE DUKE OF GRAFTON, Euston Hall, Thetford.

Ayrshire.

R. DUNLOP, Chapelhill, Castle Douglas.

Guernsey.

O. PORTMAN RUBECK, Valencia, Menth Green, Horley.

Jersey.

C. LE GALLAIS, Roseland, St. Saviour, Jersey.

Dexter.

W. G. OWEN, Braishfield, Romsey, Hants.

GOATS.

LT.-COL. W. A. STIRLING, Nussteads, Polstead, Suffolk.

CHEESE.

The "Lonsdale" and Ayrshire Agricultural Association's Challenge Trophies.

ALEC TODD, British Dairy Institute, Reading.

Stilton and Wensleydale.

C. WILSON SEARS, Montagu Chambers, Montagu Close, London, S.E. 1.

Cheddar.

W. M. LENNOX, Messrs. A. McLelland & Sons, Portland Street, Kilmarnock.

J. KIRKWOOD, Dairy School, West of Scotland Agricultural College, Auchincruive.

P. L. BROWNSEY, Messrs. Cary & Son, Ltd., Shepton Mallet.

R. MACKIE, Castle Cary, Somerset.

Dominion Cheddar.

G. SUTHERLAND THOMSON, Kenmore Farm, Whepley Hill, Chesham.

Cheshire.

P. SWAIN, Wem, Salop.

J. H. WILLIAMS, Messrs. T. Chester & Co., Nantwich.

C. SMITH, Messrs. Smith, Williamson & Co., Bradford.

F. NEWTON, Messrs. Andrew Clement & Son, Manchester.

Ayrshire Dunlop.

T. GILLILAND, Scottish Co-operative Wholesale Society, Woodstock Street, Kilmarnock.

Leicester and Derby.

A. TODD, British Dairy Institute, Reading.

Lancashire.

MISS J. STUBBS, Lanes. C. C. Dairy School, Hutton, Preston.

Caerphilly and Gloucester.

P. ROBERTS, Messrs. Aplin & Barrett, Ltd., Yeovil.

Small Hard-Pressed and Inter-County.

MISS N. BENNION, School of Agriculture, Reascheath.

Cream Cheese and Unripened Soft.

MISS A. A. PRITCHARD, Midland Agricultural College, Sutton Bonington.

BACON AND HAMS.

L. H. FEARIS, Barnwood Lodge, Hucclecote, Gloucester.

BUTTER.

2-lb. Classes.

MISS M. J. WILLIAMS, Agricultural Offices, Newtown, Mont.

MISS A. SHEPPARD, British Dairy Institute, Reading.

MISS A. COLNETT, County Dairy School, Gloucester.

Commercial.

A. A. M. FISHER, St. Cuthbert's Co-operation Association, Fountainbridge, Edinburgh.

Fancy and Ornamental.

MISS A. O'BRIEN, Northcliffe House, London, E.C. 4.

MISS N. BENNION, School of Agriculture, Reascheath.

Dominion Salted.

L. CLASSEY, Messrs. Aplin & Barrett, Ltd., 33, Park Road, London, S.W. 11.
A. N. SMITH, Peter Keevil & Sons, Ltd., 370, Edgware Road, W. 2.

Dominion Unsalted.

W. E. BULMER, 9, Custom House Street, Cardiff.
W. J. JONES, Barrow's Stores, Ltd., Corporation Street, Birmingham.

CREAM.

MISS A. A. PRITCHARD, Midland Agricultural College, Sutton Bonington.

BOTTLED FRUITS, VEGETABLES AND JAMS.

MISS E. M. GUNNELL, Bradninch Hall, Castle Street, Exeter.

HONEY AND WAX.

W. HERROD-HEMPSALL, 18, Delcroft Way, Harpenden, Herts.

HORTICULTURE.

T. HAY, C.V.O., V.M.H., New Lodge, Hyde Park, London, W. 2.
G. J. MILLER, The Gardens, Bayham Abbey, Lamberhurst, Kent.
P. MILTON, The Cottage, Egerton Park, Bexhill-on-Sea.

INVENTIONS.

E. CAPSTICK, Staplemead, Frome, Somerset.
C. N. GOODE, The Croft, Bedford Road, Rushden, Northants.
J. TAYLOR, Lauriston, Goldhanger, Maldon.
J. G. STAPLETON, Owles Hall, Crews Hill, Middlesex.

JUNKET-MAKING CONTESTS.

MISS J. M. OLDE, Dairy Cottage, Honey Hill, Wokingham.

Championship Class.

MISS H. M. TRENCHARD, East Membury Farm, Membury, Axminster.

BUTTER-MAKING CONTESTS.

MRS. MORGAN EVANS, 2, Rodney Gardens, Eastcote.
MISS A. GERRARD, Huddington, Droitwich.

Championship Class.

A. F. SMITH, Ardmohr, East Calder, Midlothian.

MILKERS' CONTESTS.

T. HOLLINS, Knightley Eaves, Eccleshall, Staffs.
G. WILLIAMSON, Royal Agricultural College, Cirencester.

COW-JUDGING CONTESTS.

A. G. ANDREWS, The Lillies Farm, Weedon, Aylesbury.
K. W. D. CAMPBELL, The University, Reading.

THE "FARMER AND STOCKBREEDER" CUP.

R. W. HADDON, Dorset House, Stamford Street, London, S.E. 1.
G. C. SANKEY, Down Lodge, Fairlight, Hastings.
H. C. TAYLOR, Messrs. Vauxhall Motors, Ltd., Luton.

THE OBJECTS OF THE BRITISH DAIRY FARMERS' ASSOCIATION.

In 1876 the British Dairy Farmers' Association was founded by a small group of men who realised the need for an Association to stimulate interest in the development of the industry, and to guide its progress along lines suitable to the needs of the milk producer and manufacturer of dairy produce. In 1879 the Association was incorporated under licence of the Board of Trade, and since that date has become the premier organisation existing for the advancement of the dairy industry.

The original Memorandum of Association states that the objects for which the Association is established are "to improve the dairy stock, the dairy produce and the dairy industry of this country, and to do all such further acts and things as shall be conducive to their interests."

In pursuance of these objects the Association has introduced new schemes and extended its influence in numerous directions, and a brief summary of the chief of these is given below:—

The Dairy Show.

The first Dairy Show was held at the Agricultural Hall, Islington, in 1876. Classes were provided for dairy cattle, goats, cheese, butter, dairy appliances, poultry and pigeons, grain and hops. The total number of entries was 928. This new venture was an immediate success, and Shows have since been held annually with the exception of the years 1916 to 1918. Classes are now provided for the principal breeds of cattle and goats; varieties of cheese; butter; bacon and hams; bottled fruits; honey; poultry and pigeons; also for butter-making, junket-making and cow-judging. The Milking Trials for cows inaugurated in 1879 and the Butter Tests (1886) have gradually developed in importance and interest and are now recognised as the premier and most complete competitions of their kind in the country. Bacon classes were first provided in 1883 and have been increased and amended to suit current conditions. Competitions for hand milkers are also held during the Show, and the conditions of entry are designed to attract winners of county competitions and to improve the efficiency of milkers throughout the country. More recently cow-judging contests have been organised for teams from Agricultural Colleges, Farm Institutes, &c., and from Young Farmers' Clubs. These competitions constitute attractive features during the later days of the Show. In recent years the total number of entries at the Show has sometimes exceeded 10,000, and cash prizes and

trophies to the approximate value of £6,000 are now offered annually. In view of the continued rapid growth of the Dairy Show during the past few years, especially in connection with the dairy machinery and appliance section, it was, in 1938, transferred to a more commodious Hall at Earls Court. It may now be claimed that the London Dairy Show is the chief competitive and social event of the year for British Dairy Farmers.

The British Dairy Farmers' Association Journal.

One of the first actions of the Council of the Association was the publication of a Journal containing original articles on subjects of interest to all sections of the industry, and reports of the Dairy Show and other activities of the Association. In the early years the Journal was published in two or four parts each year, but since 1899 it has been issued annually, and in its present form constitutes an indispensable annual addition to the bookshelves of every progressive dairy farmer.

Dairy Education.

(a) *The British Dairy Institute.*—When the Association was formed facilities for practical and scientific instruction in cheese-making and butter-making were almost non-existent. The Council realised that the development and adoption of the best methods on the farm would be materially enhanced by the establishment of a well-equipped dairy school, and in 1888 the British Dairy Institute was brought into existence at Aylesbury. In 1896, to provide fuller instruction in the sciences associated with dairy practice, an agreement was made with the University College of Reading (now the University of Reading) whereby the Institute was moved from Aylesbury to Reading and placed under the management of a Committee representing the Association and the University College. In 1910 a new Institute, with better equipment and accommodation for a larger number of students, was erected within the grounds of the College; further additions have been made from time to time, and for many years now the British Dairy Institute has been recognised as the leading centre for dairy education in England and Wales.

(b) *The British Dairy Farmers' Association Diplomas and Certificates.*—Since 1887 diplomas and certificates in the science and practice of dairying have been awarded on the results of examinations at the British Dairy Institute. In 1893 it was decided that examinations for certificates of proficiency in the science and practice of cheese-making and butter-making should be held at other centres throughout the country, and at the present time such examinations are conducted at six other dairy schools in different parts of England. By the institution of this scheme, whereby the Association appoints independent examiners

and maintains the standard of proficiency, the educational work in dairying has been extended and improved in a highly satisfactory manner.

(c) *The National Dairy Examination Board.*—The development of dairy education in England and Scotland from about 1900 onwards had led to an unnecessary duplication of diplomas in dairying, and in 1928 it was decided that the British Dairy Farmers' Association should cease to award its own diploma and should join with the Royal Agricultural Society of England and the Highland and Agricultural Society of Scotland in the formation of the National Dairy Examination Board. This Board, consisting of an equal number of members from the three parent societies, now controls and awards the National Diploma in Dairying (N.D.D.).

Dairy Research.

From time to time since its formation the Association has assisted research work on problems arising in the production and manufacture of dairy produce. When the National Institute for Research in Dairying was created and began to plan its programme of research work after the war, the Association took a keen interest in its development and from time to time gave valuable financial assistance. The co-operation between the Association and the Institute has been facilitated by the presence of a member of the Council on the Board of the Institute and by the presence of one or more members of the staff of the Institute on the Council of the Association. By this co-operation and in other ways, the Association has maintained and developed its interest in research work for the improvement of the methods adopted in the practice of milk production and the manufacture of dairy produce.

Dairy Conferences and Congresses.

The Association has also organised numerous conferences and tours in different parts of the British Isles and abroad in order that subjects of special interest could be studied in detail and first-hand information obtained in new methods. These conferences have also enabled members to combine business with pleasure; to make new friends and to acquire knowledge of other practices which could not be obtained so easily or economically by private efforts.

The World's Dairy Congress, held in England in 1928, was planned and brought to a successful conclusion mainly through the efforts of the Association. Thereafter the Association was asked by a general Committee, representing the Dairy Industry of this country, to act, when necessary, on behalf of the industry as the central agent for Great Britain in connection with future World Dairy Congresses. In this capacity the Association organised the representation of this country at the Congresses

held in 1931 (Denmark), 1934 (Italy) and 1937 (Germany). The Association is also represented on the committee of the Internationale Federation de Laiterie. This committee meets from time to time to consider dairying subjects of international interest and to decide the venue of future World Congresses.

Medal Scheme.

Soon after its formation the Association encouraged the exhibition of high-class dairy stock and produce at provincial shows by offering medals as special awards, and in 1913 the medal scheme was initiated in its present form. This scheme is designed to stimulate improvements in dairy stock and produce throughout the country, by the award of silver and bronze medals through county and local societies under specified conditions. The medals are available for exhibits of dairy cattle, cheese and butter and as special awards in dairy herd, clean milk and milking competitions. Some 70 medals are allocated each year and these are competed for in some 30 counties in England and Wales. This scheme enables the Association to recognise merit and to assist and encourage those engaged in different branches of the production side of the industry in a manner which is widely appreciated.

Dairy Equipment and New Inventions.

Since the first Show classes have been provided for dairy appliances and apparatus and for new inventions of interest to the dairy industry. After several years classes for equipment were discontinued, but space was made available where manufacturers and others could display goods and visitors could inspect them. During recent years the great increase in the use of mechanical equipment in all branches of the industry has made this section of the Show much more important. To meet this need the Council recently rearranged the layout of exhibits in the Halls, and a larger proportion of floor space is now allotted for the display of dairy and poultry appliances and kindred exhibits.

In the new inventions competition the gold, silver and bronze medals awarded by the Association are highly prized. The conditions of entry have recently been revised to require submission of the entries some months before the Show in order that those of a more complex nature might be inspected in actual operation at a farm or dairy. Reports on the practical efficiency of such entries are prepared by the Association's representatives for consideration by the judges when inspecting the entries at the Show. By this system the risk of giving of awards to ingenious and attractive, but unpractical apparatus and appliances is guarded against, and buyers can be sure that these

entries which have obtained the Association's awards are reliable and efficient.

Poultry and Pigeons.

Classes for Poultry and Pigeons were provided at the first Dairy Show in 1877, and have always been a popular feature. As the years passed, this section of the Show greatly increased in size and popularity, and it is now recognised as one of the most important shows of its kind in the country. Over 30 breeds of poultry, ducks, geese and turkeys, and 34 breeds of pigeons were represented at recent shows. The organisation of this section of the Association's work is in the hands of a Poultry and Pigeon Committee, which consists of members of the Council and a few others co-opted to represent definite poultry and pigeon interests.

Other Activities.

In addition to the work briefly described herein, the Council of the Association at its monthly meetings is continually surveying the general progress of the industry and gives special attention to those points where action, either direct or through its various committees, appears to be necessary or desirable. In recent years resolutions concerning the prohibition of preservatives in cream, tariffs on imported dairy produce, the pasteurisation of milk by local authorities and standards for British cheese and for cream have been passed and forwarded to the appropriate Government Departments.

ADVANTAGES OF MEMBERSHIP.

Members of the Association receive the following privileges:—

- 1.—A free pass to all the Association's Dairy Shows, available each day during the Exhibition, with the privilege of admitting free (by ticket) a friend on any one day.
- 2.—The privilege of participating, at specially low charges, in the Dairy Conferences organised by the Association at home or abroad.
- 3.—The Exhibition of Live Stock, Dairy Produce, and Utensils (for competition) at a reduced scale of fees to Life Members, and to Annual Members subscribing £1 per annum whose subscription for the past year and current year is paid.
- 4.—A copy (free by post) of the *Journal* of the Association, published annually.
- 5.—Analyses by the Analytical and Consulting Chemist, at low fees, of samples of milk, cream, butter, cheese, feeding stuffs, water, soil, manures, &c., and advice on dairy matters connected with his department.
- 6.—Bacteriological examination of dairy produce, &c., at reduced fees.
- 7.—Examination by the Consulting Pathological Bacteriologist for particular pathogenic or disease-producing organisms.
- 8.—Professional advice and assistance at a reduced scale of charges in any case of disease among the live stock of the farm.

The Annual Subscription is £1, but Dairy Instructors and Students and full-time Secretaries and Recorders of Milk Recording Societies are admitted on payment of 10s. 6d. per annum. The latter sum entitles Members to all privileges, except the reduced fees for exhibition at the Shows. The Life Membership fee is £15.

The Council have every confidence in appealing to agriculturists of all classes, and to dairy farmers in particular, to become members of the Association.

Members' Chemical Privileges.

Free Analysis.—Each member, whose subscription for the current year is paid, is entitled to one analysis of a dairy product (paragraphs 1 to 8 below) free of charge. A stamped addressed envelope must be forwarded with the sample for the return of the report of the analysis.

Further analyses will be made by the Association's Consulting Chemist at the following reduced fees:—

				£	s.	d.
1.—MILK (Fresh).						
Estimation of Fat and Total Solids	...	...	...	0	1	0
Estimation of Fat, Casein, Albumen, Sugar, and Ash	...	...	...	0	10	0
2.—MILK (Sour).						
Estimation of Fat and Total Solids	...	...	...	0	5	0
3. SKIMMED MILK.						
Estimation of Fat and Total Solids	...	...	...	0	5	0
4.—CONDENSED MILK.						
Estimation of Fat	...	...	...	0	5	0
Estimation of Fat, Casein, and Solids	...	...	...	0	10	0
Estimation of Cane Sugar (extra)	...	...	...	0	5	0
5.—CREAM.						
Estimation of Fat	...	...	...	0	5	0
Estimation of Fat, Casein, and Solids	...	...	...	0	12	6
Examination for Foreign Fats (extra)	...	...	...	0	10	0
6.—BUTTER.						
Estimation of Water, Fat, Casein, and Ash	...	...	...	0	10	0
Examination for Foreign Fats (extra)	...	...	...	0	10	0
7.—CHEESE.						
Estimation of Water, Fat, Casein, and Ash	...	...	...	0	10	0
Examination for Foreign Fats (extra)	...	...	...	0	10	0
8.—RENNET.						
Examination of Strength	...	...	...	0	5	0
9.—CAKES AND MEALS.						
Estimation of Oil only	...	...	...	0	5	0
Estimation of Oil, Albuminoids, Carbo-hydrates, &c.	...	...	...	0	15	0
10.—GRASS, SILAGE, ROOTS, &c.						
Estimation of Oil, Albuminoids, Carbo-hydrates, &c.	...	...	...	1	10	0
11.—MANURES.						
Estimation of Soluble Phosphoric Acid	...	...	...	0	5	0
Estimation of Soluble and Insoluble Phosphoric Acid	...	...	...	0	7	6
Estimation of Citric Soluble Phosphoric Acid	...	...	...	0	7	6
Estimation of Nitrogen	...	...	...	0	5	0
Estimation of Potash	...	...	...	0	7	6
12.—SOIL.						
Estimation of Lime	...	...	...	0	5	0
Analysis and Report	...	...	...	2	2	0
13.—WATER.						
Analysis for Drinking or Dairy Purposes	...	...	...	1	1	0
14.—CIDER AND FERMENTED DRINKS.						
Estimation of Alcohol	...	...	...	0	7	6
Estimation of Alcohol, Sugar, Acidity, &c.	...	...	...	0	15	0
15.—PRESERVATIVES.						
Examining a Substance for Boracic Acid or Salicylic Acid, &c. for each Substance sought	...	...	...	0	2	6
Estimation of the quantity of Boracic Acid	...	...	...	0	10	6
16.—CONSULTATIONS AND REPORTS ON SUBJECTS, BY ARRANGEMENT.						
For Letter in reply to Enquiry	...	...	...	Free		

NOTE.—The Consulting Chemist will be prepared to quote reduced terms to members requiring a number of analyses at frequent intervals.

Instructions for Taking Fair Samples for Analysis.

Dairy Produce.—Milk should be sent in a well-corked 8-oz. clear bottle. The milk should quite fill the bottle. Butter or cheese, about 8 ounces; the former in a gallipot well tied down.

Soils.—A block of soil about four or five inches square, and nine inches deep, should be sent in a strong box by rail.

Artificial Manures.—Take a handful of manure out of at least half a dozen bags, mix these rapidly and thoroughly, breaking down all lumps. Forward about a pound of the mixture in a tin box, and retain the remainder. Samples of manure should be sent immediately after the delivery of the bulk. All manures should be bought subject to analysis.

Feeding Materials.—Feeding cakes, meals or grains: about a pound should be sent in a bag or box. Grass and hay: a bundle or a few pounds weight. Silage: a six-inch cubic block, packed closely in a box to keep it compressed.

Waters.—A Winchester quart glass-stoppered bottle should be procured from a druggist, well washed out with the water, then completely filled, the stopper tied securely down, and the bottle packed in a box and sent by rail.

N.B.—In order to prevent disappointment, the Chemist requests that, as far as possible, Members desiring to hold a personal consultation should make an appointment by letter. Between 10 and 4 are the hours most convenient. All communications intended for the Analytical and Consulting Chemist must be addressed direct to DR. T. J. DRAKELEY, D.Sc., Ph.D., F.I.C., F.I.R.I., F.C.S., 28, Russell Square, London, W.C.1.

All samples should be sent by the speediest method possible. They ought not to arrive either on Saturday or Sunday.

Members' Bacteriological Privileges.**Examination of Samples of Designated Milks.**

Samples submitted for examination under the Milk (Special Designations) Order, 1936 (Ministry of Health Memo. 139/ Foods, Jan., 1937) should be forwarded to DR. T. J. DRAKELEY, D.Sc., Ph.D., F.I.C., F.C.S., F.I.R.I., 28, Russell Square, London, W.C.1. The scale of fees is as follows:—

RAW MILK.				£	s.	d.
1.—Methylene Blue Reduction Test	...	...	...	0	2	0
2.—Methylene Blue Reduction Test—Coliform organisms	...	...	...	...	...	...
in three tubes of 1/100 ml.	...	...	...	0	2	6
HEATED MILK.				£	s.	d.
3.—Bacteriological plate (colony) count	...	...	...	0	3	6
4.—Bacteriological plate (colony) count—Phosphatase Test	...	...	...	0	5	0
5.—Phosphatase Test	...	...	...	0	3	0

Examinations for Pathogenic Organisms.

By arrangement with the National Institute for Research in Dairying, Shinfield, near Reading, samples to be examined for the pathogenic organisms mentioned below may be sent to DR. A. T. R. MATTICK (at the above address), who will supply on request the necessary sterile equipment with instructions as to the method of taking and dispatching samples. Members are asked to note that in the examinations for tubercle bacilli the method of animal inoculation will be used. This is the only reliable method, but except in special cases this method necessarily involves a delay of eight weeks before the report can be sent.

A similar delay **may** be involved when samples have to be examined for the presence of Br. abortus.

Examinations will be at the following fees:—

MILK.	£	s.	d.
Examination for the presence of living tubercle bacilli or Br. abortus	1	1	0
CREAM, BUTTER AND CHEESE.			
Examination for the presence of living tubercle bacilli or Br. abortus	1	10	6

Members' Veterinary Privileges.

Members of the Association who require professional assistance in any case of disease among their animals must apply direct to the Consulting Veterinary Surgeon, Professor G. H. WOOLDRIDGE, Royal Veterinary College, Camden Town, London, N.W. 1, whose scale of charges is as follows:—

	£	s.	d.
Personal Consultation	0	10	0
Post-mortem Examination and Report	1	1	0
Consultation by Letter	0	5	0
Visit and Report, in case of an outbreak of disease, in addition to personal and travelling expenses, per day	3	3	0

Members' Botanical Privileges.

Members may submit seeds and plants for botanical examination, and the following are a few of the special fees:—

No.	£	s.	d.
1.—A Report on the purity of a sample of seed	0	1	0
2.—A Report on the germinating power of a sample of seed ...	0	1	0
Nos. 1 and 2 together	0	1	6
3.—Determination of the species of any weed or other plant, or of any vegetable parasite, with a report on its habits, and the means for its extermination or prevention	0	1	0
4.—Determination of the species of a collection of natural grasses found in any district, with a report on their habits and pasture value	0	4	0

Instructions for Selecting and Sending Samples.

At least one ounce of grass and other small seeds should be sent, and two ounces of cereals or larger seeds. Grass seeds should be sent at least four weeks, and clover seeds two weeks before they are to be used. In collecting specimens of plants, the whole plant should be taken up and the earth shaken from the roots. If possible the plant should be in flower or fruit. They should be packed in a light box, or in a firm paper parcel. Specimens of diseased plants or of parasites should be forwarded as fresh as possible, either in a bottle, or packed in tinfoil or oil silk. All specimens should be accompanied with a letter specifying the nature of the information required, and stating any local circumstance (soil, situation, &c) which, in the opinion of the sender, would be likely to throw light on the inquiry.

The proper fee should be sent with the letter concerning the sample to DR. T. J. DRAKELEY, D.Sc., Ph.D., F.I.C., F.C.S., F.I.R.I., 28, Russell Square, London, W.C. 1.

BRITISH DAIRY INSTITUTE.

The British Dairy Institute was established at Aylesbury in 1888 by the British Dairy Farmers' Association. In order that students might have an opportunity of combining practical dairying with scientific instruction, the Institute was removed in 1896 to Valpy Street, Reading, and placed under a committee which now represents the British Dairy Farmers' Association and Reading University. The Institute at present occupies buildings on the University site in London Road, Reading (the side entrance to the Institute is in Redlands Road).

The Institute contains milk-receiving, buttermaking and milk-testing rooms; rooms for the manufacture of pressed, unpressed, and soft cheeses; and ripening rooms for the different varieties of cheese. It is equipped with the best modern apparatus for the manufacture of dairy produce, including power driven separating and buttermaking plant; and cold storage, ice cream and pasteurizing plants.

The Institute is open in each year from the last Friday in January until the end of the autumn term (the middle of December). Courses at the Institute are open to men and women above the age of 16 years, and all students admitted are thereby subject to University regulations. Except for recognised courses, students may join at any time which the Institute is open, and for any period not less than a week.

Practical and theoretical instruction is given in all branches of dairying, and may be advanced, elementary, or specialised, according to requirements. The manufacture of hard-pressed and soft cheeses is taught throughout the time the Institute is open, but Stilton and other blue-veined varieties are not made until May. Instruction is also given in buttermaking, the management of various types of separators, the handling and care of milk, the preparation of starters, &c.

Lectures and demonstrations are usually given in the afternoons, the mornings being devoted to practical work.

The following courses are open to students:—

B.Sc., DAIRYING. Duration of course, three years.

First session of three terms—study for Intermediate Examination.

Two sessions—study for Pass Degree.

During the first year a month must be spent at the British Dairy Institute during the vacation following Summer term, and

an additional month's experience obtained in a dairy factory. After qualification for the Pass Degree, distinction may be obtained by a further year of advanced work on a chosen subject, and by passing the final examination Reading University.

DIPLOMA IN DAIRYING.

Duration of course two years, exclusive of six months' practical farm experience. Fees £35 first year, £41 second year.

NATIONAL DIPLOMA IN DAIRYING (National Diploma Examination Board).

Duration of course two years, exclusive of six months spent on a dairy farm recognised by the Board. The examination is held in September, and can be taken by students who have followed the Reading University Dairying Diploma course.

CERTIFICATE IN DAIRYING.

Duration of course six months (March—September). This course is suitable for students who wish to qualify for the British Dairy Farmers' Association certificates in butter and cheesemaking (the latter requires an additional six months' cheesemaking experience). Fees £21.

Short courses in practical and theoretical dairying are given by arrangement with the British Dairy Institute. Fees, Cheesemaking 25s. per week; Buttermaking 12s. 6d. per week.

The full syllabus of courses, details of residence, regulations, uniform, &c., can be obtained on application to the Secretary, British Dairy Institute, Reading.

British Dairy Farmers' Association

Sixty-third Half-Yearly Report of the Council presented to the Members at the Meeting held at the Dairy Show, in the Cromwell Hall, Earls Court, London, S.W.5, on Tuesday, September 27th, 1938.

The year 1938 has been a momentous one in the affairs of the British Dairy Farmers' Association in that it has seen the removal of the Annual Dairy Show from Islington to the spacious premises at Earls Court. Not until one comes to move a show of 59 years' standing does one realise the multiplicity of detail which goes to its making and successful staging. It is fitting that this move should coincide with the Diamond Jubilee Show.

Support for the Show has come from every quarter, and it is particularly gratifying to your Council that its action has won universal approval.

Your Council agreed that the cattle section at the 1938 Dairy Show should be open only to animals from Licensed T.T. or Attested herds or such other cattle which had passed the double intra-dermal test between July 22nd and August 20th, 1938, inclusive.

Attached to this report is a comparative statement of entries over the past 12 years. Despite the earlier date of the Show, you will observe that the entries have been maintained. As an offset to the earlier calving date which was inevitable, the Council instituted classes for in-calf cows and heifers, and this has attracted satisfactory support.

The entry of 130 goats is a record without parallel.

In the Poultry Section special classes have been instituted for small poultry keepers and competitions arranged for Poultry Plucking and Trussing. Classification is also provided for officially Pedigreed Birds.

At a suggestion of a member, provision has been made for a Horticultural Section. This, it is hoped, will prove an interesting feature of the Show. Members will thus see that the Show has lost none of that universality which has so long stood it in good stead.

Applications received in connection with the Non-competitive section constitute a record. The competition for the "Farmer and Stockbreeder" Challenge Cup for the best Stand in the Show, together with a gold medal bearing a cast of a replica of the Trophy, will therefore be very keen. Your Council has agreed to give as second and third prizes respectively, the silver and bronze medals of the Association.

Learning that the International Dairy Federation, with which your Association has strong ties, intended to hold their series of meetings in London this year, your Council at once invited the delegates to meet during the Dairy Show week. This invitation has been accepted and rooms have been placed at their disposal at Earls Court. A Dinner to the delegates will be given on Tuesday evening, September 27th.

The success which attended the Milk Bar provided by the National Milk Publicity Council last year has justified your Council in again approaching that Body to make similar arrangements for the forthcoming Show.

BRITISH DAIRY INSTITUTE.

The Joint Committee of the British Dairy Institute reports that Mr. Alec Todd retires from the managership of the Institute in September, 1938, and that Mr. E. Capstick, M.Sc., has been appointed to succeed him and has also been appointed Professor of Dairying at the University of Reading.

PRESIDENT.

Your Council has very great pleasure in announcing that H.R.H. The Princess Royal has graciously consented to become President in 1939, and your vote will therefore be asked in support of the candidature of Her Royal Highness.

VICE-PRESIDENTS.

The following list of Vice-Presidents has been prepared and your approval will be sought for their election:—

The Earl of Iveagh, C.B., C.M.G.
 The Earl of Lonsdale, K.G., G.C.V.O.
 The Viscount Bledisloe, P.C., G.C.M.G., K.B.E.
 Major The Lord O'Hagan.
 The Lord Desborough, K.G., G.C.V.O.
 The Lord Daresbury, C.V.O.
 The Lord Rowallan.
 The Lord Eltisley, K.B.E.
 Major G. Miller Mundy.
 John Evens, Esq., J.P.
 H. S. Holmes Pegler, Esq.

COUNCIL.

During the period under review Mr. J. G. Stapleton tendered his resignation from the Council and in accordance with the Articles of Association, the following members of the Council retire this year :—

J. F. Codd.	W. F. Jessop.
S. Edwards.	H. S. Holmes Pegler.
John Evens, Junr.	G. C. Sankey.
J. T. H. Farmer.	P. Stanbury.
C. N. Goode.	P. H. Worsley.
W. H. Hobson.	

With the exception of Mr. H. S. Holmes Pegler who, in view of his being one of the Founders of the Association is being proposed as a Vice-President, the above have been again duly nominated and seconded.

The following candidates have also been proposed and seconded :—

Mrs. M. L. Griffith (Farmer), Little Hallingbury Park, Essex. Proposed by Lord Cranworth, seconded by C. A. Brooks.

Moses Griffiths (Lands Director), University College of Wales, Aberystwyth. Proposed by Sidney Edwards, seconded by Richard H. Evans.

T. Martlew (Farmer), 56, Woodlands Park, Girton, Cambridge. Proposed by Alan Noden, seconded by John H. Salmon.

Alec Todd (Manager of the British Dairy Institute), The University, Reading. Proposed by Sidney Edwards, seconded by Thos. W. Palmer.

Miss D. Jervoise Smith (Landowner and Farmer), Sandwell, Harberton, Totnes. Proposed by Walter Hunt, seconded by E. V. Bunday.

A. Turner (Farmer), Dean, Goodleigh, Barnstaple. Proposed by Sidney Edwards, seconded by J. T. H. Farmer.

MEMBERSHIP.

Although there are numerous additions to the membership of the Association each year, your Council wish to see a further increase. To attain this end all members are asked to make known to friends and neighbours the privileges of membership and to submit their names for election wherever possible.

CONFERENCE.

In view of the success which attended the Conference held in Finland this year, a full report of which will appear in the

Association's Journal, Vol. 51, your Council has agreed to arrange a tour in Holland next year for about seven days. A programme will be prepared and issued as soon as possible and it is sincerely hoped that a sufficient number of applications will be received to make the project possible.

By order of the Council,

FRED J. BULL,
Secretary.

28, RUSSELL SQUARE,
LONDON, W.C.1.
September, 1938.

THE FOLLOWING TABLE GIVES COMPARATIVE DETAILS OF THE ENTRIES AT THE DAIRY SHOW
WITH THOSE OF THE PAST TWELVE YEARS.

	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	1937.	1938.
Cattle	449	449	366	356	390	382	344	348	427	421	424	370	359
Milking and Butter Tests	693	737	563	547	628	612	626	586	678	664	711	608	568
Goats	78	68	53	90	80	105	104	115	106	84	70	84	130
Poultry	4,352	3,888	3,642	3,432	3,395	3,314	3,037	2,933	3,016	3,103	2,678	2,233	1,662
Pigeons	3,180	3,098	3,083	2,959	2,655	2,616	2,396	2,611	2,471	2,559	2,606	2,538	1,628
Cheese	489	698	664	519	596	578	462	441	627	633	642	684	670
Bacon and Hams	95	105	103	95	120	64	99	76	81	100	107	103	99
Butter	430	488	476	391	413	438	354	297	279	308	257	275	266
Cream	30	43	47	43	64	59	42	37	47	54	51	44	45
Honey, &c.	65	56	88	111	95	85	76	116	152	114	98	85	92
Bottled Fruits and Vegetables	56	80	34	116	87	96	61	119	116	79	96	99	44
New and Improved Inventions	50	57	13	30	20	23	20	25	32	41	28	32	34
Roots	272	242	165	31	12	No class	No class	No class	No class	No class	No class	No class	No class
Butter-making Contests	131	155	124	152	152	143	124	128	146	167	150	135	116
Milkers' Contests	47	61	44	41	70	71	67	68	84	81	75	88	78
Junket-making Contests	28	38	36	31	42	40	40	50	42	45	53	55	62
Horticulture	No class	No class	No class	No class	No class	No class	No class	No class	No class	No class	No class	No class	34
Cow-Judging Contest	10	9	7	10	7	4	7	8	15	8	11	13	10
Collection of Produce	9	9	7	33	14	19	9	9	16	11	10	10	—
	10,464	10,271	9,515	8,987	8,840	8,649	7,868	7,967	8,335	8,472	8,067	7,456	5,897

63rd Annual Report of the Council

for the Year ended 31st December, 1938.

Presented to the General Meeting of Members on
Wednesday, 10th May, 1939.

In presenting the 63rd Annual Report, your Council has, in the first place, the painful duty of placing on record the deaths of Lord Daresbury, C.V.O., and of Capt. R. Oliver-Bellasis, J.P.

Lord Daresbury was elected a member of the Association in 1904 and President in 1914, 1929 and 1930. His kindly advice and untiring efforts in the interests of the dairying industry will be sadly missed by all, particularly by the members of your Council with whom he laboured for many years. A memoir, together with a photograph, will appear in the next JOURNAL.

Capt. R. Oliver-Bellasis joined the Association in 1891 and was elected to a seat on the Council in 1902, a position he held continuously until his death. He was, for many years, a member of the Finance and Conference Committees and acted as a Steward at several Dairy Shows. Your Council desires to place on record its sincere appreciation of his valuable services over such a long period.

COUNCIL.

During the period under review, through the election of Mr. H. S. Holmes Pegler as a Vice-President, the resignation of Mr. J. G. Stapleton, which was accepted with regret, and the death of Capt. R. Oliver-Bellasis, the constitution of your Council has undergone three changes. Mr. M. Griffith, Mr. T. Martlew and Mr. A. Todd are the newly elected members.

MEMBERSHIP.

The total membership at the close of the year was 1,709, of whom 1,579 were annual, 120 life and 10 honorary members with 1 associated and 12 affiliated Societies. Your retiring President, Major G. Miller Mundy, has sent a personal letter to all members pointing out that it does not seem too much to aim for a membership of at least 2,500 and that this figure could be attained if one member out of every two would introduce a new member. He has expressed the sincere hope that present members will propose their friends thus helping the Council to

fully maintain its activities. Your Council therefore trusts that all members will use every endeavour to persuade their friends to join the Association, and so assist Major Miller Mundy in his efforts to expand its valuable activities.

DAIRY SHOW, 1938.

The Diamond Jubilee Dairy Show, held at Earls Court, London, on 26th to 29th September, was well supported in all sections, especially in the non-competitive section, where the applications received constituted a record. Despite the incidence of the international crisis coinciding with the period of the Show, your Council is convinced of the excellence of the arrangements made and looks forward, with confidence, to the next Dairy Show to be held at Earls Court from 26th to 29th September. As the various classes were reviewed in the last half-yearly report, and in view of the detailed reports which will appear in the next JOURNAL your Council consider it unnecessary to give further details here.

ACCOUNTS.

In accordance with the Articles of Association the Income and Expenditure Account together with a Balance Sheet for 1938, duly certified by the Chartered Accountant, is appended to this report.

EXAMINATIONS.

During the past year examinations have been held at the following six centres:—

Agricultural Institute, Usk, Monmouthshire.

British Dairy Institute, Reading, Berkshire.

Farm Institute, Sparsholt, Hampshire.

Scale-Hayne Agricultural College, Newton Abbot, Devon.

Somerset Farm Institute, Cannington, Somerset.

Studley College, Studley, Warwickshire.

In all 78 certificates for buttermaking and 47 for cheese-making were awarded.

The 43rd annual examination for the National Diploma in Dairying took place in September at the University and British Dairy Institute, Reading, for students from English and Welsh centres, and at the Dairy School for Scotland, Auchinervie, Ayr, for Scottish students. At the English centre 100 candidates were examined, of whom 75 were awarded the Diploma, and 49 presented themselves at the Scottish centre, of whom 34 obtained the Diploma, one passing with Honours.

MEDAL SCHEME.

Under the above scheme the following medals were awarded during 1938:—

				Silver.	Bronze.
Dairy Cattle	...	...	...	13	2
Produce	...	...	...	2	7
Buttermaking	...	...	...	4	1
Milkers' Contests	...	...	...	7	7
Cow Judging Contests	...	...	...	1	2
Poultry Judging Contests	...	...	...	1	4
				<hr/> 28	<hr/> 23

CONFERENCE, 1938.

An interesting and instructive Conference was held in Finland during the latter part of May and early June, when a party numbering 23 received hospitality on all sides whilst visiting centres of a dairying character. A detailed report has been prepared and will appear in the next JOURNAL.

INTERNATIONAL DAIRY FEDERATION.

During the week of the Dairy Show, at the invitation of your Council important meetings of all the Commissions of the International Dairy Federation were held at Earls Court. Thirty-seven delegates and experts were sent to the meetings by the National Committees of the following countries:—Australia (1), Belgium (5), Denmark (5), Finland (1), France (2), Germany (8), Great Britain (3), Holland (5), Italy (1), Ireland (1), Latvia (1), Norway (1), New Zealand (1), Sweden (1) and Switzerland (1).

The undermentioned meetings took place during the four days:—

1. Sixth meeting of the Executive Bureau of the Commission of Studies,
2. Seventh meeting of the Second International Commission on Cheese,
3. Fourth meeting of the International Commission on Dried Milks,
4. Ninth meeting of the International Commission for the study and dissemination of methods of production of hygienic milk,
5. First meeting of Special Commission (a) for the study of milk production and control.

6. First meeting of Special Commission (*b*) for the standardisation of methods for the chemical and bacteriological examination of milk,
7. First meeting of the Commission on Dairy Equipment and Factories,
8. Twelfth plenary meeting of the Commission of Studies, and
9. Twenty-ninth Annual Statutory General Meeting of the Permanent Bureau of the International Dairy Federation.

Several receptions also took place on this occasion, including an official dinner to the delegates on the invitation of your Council.

During the past year your Council, as the National Committee for Great Britain, has been requested by the Federation to consider several questions relating to the dairy industry, and the following reports have been compiled and forwarded to them:—

1. Fat content of the whole cheese as a standard.
2. Quantitative regulations and price agreements in the milk products industry.
3. Containers for the transport and sale of milk and milk products.
4. Dairy education.

STANDARDS FOR DAIRY MATERIALS.

The British Standards Institution is preparing specifications for various materials used in the dairying industry, and representatives of the British Dairy Farmers' Association are members of the various committees entrusted with the preparation of these specifications.

During 1938 the following specifications were approved and published:—

No. 769. British Standard Methods for the chemical analysis of butter.

No. 770. British Standard Methods for the chemical analysis of cheese.

No. 809. British Standard Methods for the sampling of dairy products.

Draft tentative specifications have been prepared on the following subjects and will be published in due course:—

1. Cheese cloth and butter muslin.
2. Microbiological examination of butter.
3. Coated tinfoil.
4. Salt for dairy purposes.

CHRONIC CATTLE DISEASES.

Your Council has given serious consideration to the question of chronic cattle diseases, and forwarded the following resolution to the Ministry of Agriculture and Fisheries :—

“The Council of this Association has recently given consideration to the following resolution adopted at the World’s Eleventh Dairy Congress, Berlin, 1937 :—

‘Chronic cattle diseases (brucellosis, tuberculosis and streptococci mastitis) cause serious losses in breeding, in meat and fat production, in milk yield and also endanger human health; they also cause the early removal of many of the best cows. The Congress, therefore, considers the effective eradication of brucellosis, tuberculosis and streptococci mastitis to be an urgent need and recommends the adoption of suitable measures by the various Governments.’

The Council is aware of and heartily endorses the strenuous efforts being made to control and eradicate tuberculosis through the Attested Herds Scheme and the Agriculture Act, 1937, and does not consider any recommendation such as that approved by the World’s Dairy Congress to be necessary in this country regarding tuberculosis. The Council regards contagious abortion and streptococci mastitis as equal if not more serious causes of loss to dairy farmers than tuberculosis, and is in agreement with the recommendations of the World’s Dairy Congress regarding these diseases. The Council of the British Dairy Farmers’ Association therefore asks the Ministry to institute, at the earliest possible moment, schemes or methods whereby these diseases may be controlled in, and ultimately eradicated from, dairy herds.”

CONFERENCE, 1939.

Your Council avails itself of the present opportunity of announcing that it has decided to hold a Dairy Conference and Tour in Holland from 17th to 24th June inclusive. A programme has been circulated and members are asked to make application at the earliest possible moment so that necessary arrangements may be made.

By order of the Council,

FRED J. BULL,

Secretary.

28, RUSSELL SQUARE,
LONDON, W.C. 1.

THE BRITISH DAIRY

FINANCIAL

Dr.

GENERAL INCOME AND EXPENDITUREEXPENDITURE.

								£	s.	d.
Education and Journal	...	...	...	...	...	...	...	984	0	2
Rent, Salaries and Wages	...	...	...	...	...	...	...	3,819	2	2
Hire of Halls and Fittings and Sundry Show Expenses	...	...	...	...	...	...	...	17,132	4	3
Catalogues and Dairy	...	...	...	...	...	...	...	1,406	11	3
Professional and Officers' Retaining Fees and Expenses	...	...	...	...	...	...	...	560	4	9
Printing, Stationery and Office Expenses	...	...	...	...	...	...	...	371	14	4
Superannuation	...	...	...	...	...	...	...	124	10	6
Depreciation of Furniture and Appliances	...	...	...	...	...	...	...	654	2	6
Subscriptions and Donations	...	...	...	...	...	...	...	309	1	0

£25,361 10 11

FARMERS' ASSOCIATION.

STATEMENTS.

ACCOUNT for the Year ended 31st December, 1938.

Cr.

INCOME.

	£	s.	d.
Subscriptions	1,354	2	0
Education and Journal	168	19	0
Entry Fees and Admission Money	15,946	19	9
Catalogues Sales and Prize Contributions	1,224	4	4
Interest on Investments and Bank Deposit	1,441	14	3
Balance, being Excess of Expenditure over Income	5,225	11	7

£25,361 10 11

The British Dairy Farmers' Association.

Particulars of Medal Distribution Scheme.

THE Council of the British Dairy Farmers' Association is prepared to consider applications from Educational Centres and Approved Societies in the United Kingdom for their Silver and Bronze Medals to be awarded in connection with dairying and dairy farming under the following conditions, viz:—

1. All applications must be made on the official form and must clearly state the object for which the Medal or Medals are required.
2. Only one application from any Institution or Society can be considered in any one year.
3. The application must be repeated annually if medals are again required.
4. A copy of the draft prize list, showing the proposed conditions for the award of the Medal, should accompany the application, and the offer of a Medal cannot be confirmed until the prize list has been approved by the British Dairy Farmers' Association.
5. The British Dairy Farmers' Association stipulates that no entry fee shall be charged in respect of these Medals, which are offered as Special Extra Prizes.
6. Notification of the award, with the winner's full name and address, together with a marked catalogue of the Show, to be forwarded to the Secretary, British Dairy Farmers' Association, 28, Russell Square, London, W.C. 1, within 14 days of the award being made.
7. A person may not receive more than one Medal under this Scheme for the same subject or exhibit during any one year.
8. Medals will not be granted in competitions where cups and/or trophies are also offered.
9. A medal will not be awarded in any class where there are less than six exhibits present.
10. This Scheme came into operation on January 1st, 1934, and takes the place of all previous Schemes.

DAIRY PRODUCE AND BUTTERMILKING.—The B.D.F.A. will consider applications on behalf of County or similar Shows for a Silver Medal as a Championship award.

The B.D.F.A. Bronze Medals may be available for local Shows and in each case shall only be awarded to the best exhibit or competitor.

CATTLE.—The B.D.F.A. Silver Medals will only be awarded at County and similar Shows to cows or heifers which are milk-recorded under the Ministry of Agriculture Scheme.

Such Medals shall only be awarded to animals which have produced not less than the undermentioned minimum milk yields either during a lactation period of 315 days or for any one completed year of a recognised Milk Recording Society:—

Dairy Shorthorns, Lincoln Red Shorthorns, Blue Albions, British Friesians, Red Polls, Ayrshires, South Devons, Guernseys and Jerseys, 8,000 lbs. at 5 years old or over, or 6,000 lbs. at under 5 years.

Devons, Kerries and Welsh Blacks, 7,000 lbs. at 5 years old or over, or 5,500 lbs. at under 5 years.

Dexters, 5,000 lbs. at 5 years old or over, or 3,750 lbs. at under 5 years.

The B.D.F.A. Bronze Medals for cattle will be available only at Local Shows under similar conditions.

The B.D.F.A. Silver Medals will only be awarded to Bulls out of recorded cows whose milk records comply with the yields stated above.

The official Form A.56/TL., obtainable from Milk Recording Societies, giving the milk yield of the animal concerned, must be forwarded with the notification of the award. In the case of a Bull, the record of its dam is required.

DAIRY HERDS.—The B.D.F.A. will consider applications for Silver or Bronze Medals by the authorities organising dairy herd competitions.

Such medals shall only be awarded to herds which are recorded under the Ministry of Agriculture's Milk Recording Scheme.

CLEAN MILK COMPETITIONS.—The Gold Medal of the British Dairy Farmers' Association will be awarded to the leading competitor in each of the advisory provinces as arranged by the Ministry of Agriculture and Fisheries, provided the competition is recognised by the Ministry.

MILKING COMPETITIONS.—The B.D.F.A. will consider applications for Silver or Bronze Medals by the authorities organising County and District Milking Competitions.

Such Medals shall only be awarded where the milking competitions are judged in conformity with the scale of points issued by the Ministry of Agriculture, or as used at the Dairy Show.

OTHER COMPETITIONS.—The B.D.F.A. will consider applications for medals from properly constituted authorities for such other competitions as may be designed to lead to improvements in the practice of Dairy Farming or Dairying.

In the event of any dispute as to the interpretation of these Rules the Council of the British Dairy Farmers' Association reserves full power of decision, and in the event of the Medal not being awarded in accordance with the above Rules and Conditions, the Council reserves the right to withhold the Medal altogether.

MEDALS AWARDED DURING 1938.

Applicant.	Show held at	Date.	Medal.	Winner and Object.
Yeovil Shorthorn Bull Society	Yeovil	Mar. 15...	Bronze	Wilkinthrop Estate Co., for Dairy Shorthorn Bull, "Throop Tony," as best dairy bull out of a recorded cow.
Monmouthshire County Council	Llandowais	May 23 & 24 May 23 & 24 May 23 & 24	Silver Silver Bronze	George Ruff, First in Milking Contest for Men. Nancy Heath, First in Milking Contest for Women. Morgan Thomas, First in Milking Contest for Competitors under 18.
		May 23 & 24	Bronze	Tony Williams, First in Milking Contest for Competitors under 16.
Shropshire and West Midland Agricultural Society	Shrewsbury	May 23 & 24	Bronze	Maybes Powell, First in Milking Contest for Students of Monmouthshire Agricultural Institute.
Cambridgeshire and Isle of Ely Agricultural Society	Chatteris	May 25 & 26	Silver	Tudge & Maybery, for Shorthorn Cow, "Whittingslow Freckles," as best recorded dairy cow or heifer.
		May 28...	Silver	P. J. Mason, for Shorthorn Cow, "Porch Agnes 2nd," as best recorded dairy cow or heifer.
Royal Counties Agricultural Society	Bournemouth	June 1-4	Silver	Mrs. M. K. Mitchell, Champion Buttermaker.
Suffolk Agricultural Association	Bury St. Edmunds	June 2 & 3	Silver	Miss S. Bourke, Champion Buttermaker.
Three Counties Agricultural Society	Gloucester...	June 7-9	Silver	Mrs. E. B. Weeks, Champion Buttermaker.
Essex Agricultural Society	Grainuree	June 8 & 9	Silver	Miss J. Thomson, Champion Milker.
Royal Cornwall Agricultural Association	Helston	June 8 & 9	Silver	Bilkey Bros., for South Devon Cow, "Helstonian Dolly," as best recorded dairy cow or heifer.
Staffordshire Agricultural Society	Stone	June 8 & 9	Silver	Miss M. Tripp, for best exhibit of butter.
Lincolnshire Agricultural Society	Scunthorpe	June 16 June 22-24	Bronze Silver	Miss B. Simpson, for best exhibit of butter. King's College Farms, for Shorthorn Cow, "Holmescales Meadowsweet," as best recorded dairy cow or heifer.
Yealtonpton Agricultural Society	Yealtonpton	July 13...	Bronze	Mrs. C. E. Harvey, for butter, as best exhibit of butter or cream.
Yorkshire Agricultural Society	Doncaster...	July 13-15	Silver	Miss O. Eustice, Champion Buttermaker.
Tunbridge Wells and S.E. Counties Agricultural Society	Tunbridge Wells	July 19 & 20	Silver	J. Cronk, for Shorthorn Cow, "Greatfrew Eve 6th," as best recorded dairy cow or heifer.
Bedfordshire Agricultural Society	Amptill	July 21...	Silver	W. H. Vigns, for Shorthorn Bull, "Revels Lord Fancies," as best dairy bull out of a recorded cow.
"	"	July 21...	Silver	J. H. Brown, for Shorthorn Cow, "Greatbarford Granny 9th," as best recorded dairy cow or heifer.
Royal Lancashire Agricultural Society	Liverpool	July 23 to Aug. 1	Silver	J. P. Morgan, for best exhibit of butter.
North-East Somerset Farmers' Club	Harrington	July 30...	Bronze	N. Osborne, for best exhibit of cheese.
Berkeley Hunt Agricultural Society	Berkeley	Aug. 1 ...	Bronze	R. A. Perry, for best exhibit of cheese.
Harrogate Agricultural Society	Harrogate...	Aug. 2 ...	Bronze	Mrs. J. Houseman, for best exhibit of butter.
United Counties Agricultural Society	Carmarthen	Aug. 11...	Silver	James Bros., for Shorthorn Cow, "Gwalla Bridesmaid 20th," as best recorded dairy cow or heifer.

MEDALS AWARDED DURING 1938—continued

Applicant.	Show held at	Date.	Medal.	Winner and Object.
Penistone Agricultural Society	Penistone ...	Aug. 25...	Bronze ...	Miss A. M. Ward, for best exhibit of butter.
Dorchester Agricultural Society	Dorchester	Sept. 1 ...	Silver ...	G. E. Braddick, for Devon Bull, "Heazle Noble," as best dairy bull out of a recorded cow.
"	"	Sept. 1 ...	Silver ...	Mrs. P. Torg, for British Friesian Cow, "Crawford Dorothy," as best recorded dairy cow or heifer.
Devynock Agricultural Society	Semybridge	Sept. 3 ...	Bronze ...	Miss N. Heath, Champion Buttermaker.
Westmorland and Kendal District Agricultural Society	Kendal ...	Sept. 15...	Silver ...	C. Dobson, for Shorthorn Bull, "Lavender Star," as best dairy bull out of a recorded cow.
"	"	Sept. 16...	Silver ...	H. W. Tomlinson, for Shorthorn Bull, "Duke of Caletaria," as best dairy bull out of a recorded cow.
Hampshire County Council	Itchen Abbas	Sept. 20...	Silver ...	F. Stacey, First in Milkers' Contest. Special Class for winners in 1936 Contests.
"	"	"	Bronze ...	R. C. Howard, Equal Second in Milkers' Contest. Special Class for winners in 1936 Contests.
"	"	"	Bronze ...	H. Rustell, Equal Second in Milkers' Contest. Special Class for winners in 1936 Contests.
"	"	"	Silver ...	T. Rigby, junr., Equal First in Milkers' Contest for Competitors over 18.
"	"	"	Silver ...	F. C. Thomas, Equal First in Milkers' Contest for Competitors over 18.
"	"	"	Bronze ...	F. Duffin, second in Milkers' Contest for Competitors over 18.
"	"	"	Silver ...	J. E. Barnes, First in Milkers' Contest for Competitors under 18.
"	"	"	Bronze ...	W. R. Garrett, Second in Milkers' Contest for Competitors under 18.
National Federation of Young Farmers' Clubs	Dairy Show, London	Sept. 20-29	Silver ...	John Nicholson, First in Cow Judging Contest.
"	"	"	Bronze ...	William Manners, Second in Cow Judging Contest.
"	"	"	Bronze ...	James S. Throup, Third in Cow Judging Contest.
"	"	"	Silver ...	Miss Betty Rowland, First in Poultry Judging Contest.
"	"	"	Bronze ...	Maurice Drucequer, Second in Poultry Judging Contest.
"	"	"	Bronze ...	Miss Hilda Braithwaite, Equal Third in Poultry Judging Contest.
"	"	"	Bronze ...	Miss Nora Speed, Equal Third in Poultry Judging Contest.
"	"	"	Bronze ...	Miss Phyllis Dolison, Equal Third in Poultry Judging Contest.
East Devon Milk Recording Society	East Devon	Oct. 1, 1937, to Sept. 30, 1938	Silver ...	Lord Pottimore, for Guernsey Cow, "Violet 7th," as the recorded cow giving the highest amount of butter-fat.
Devon Cattle Breeders' Society	Exeter ...	Oct. 5 ...	Bronze ...	R. W. Fowler, for Devon Bull, "Veum Ottery Plum," as best dairy bull out of a recorded cow.
Lancashire Cheese & Dairy Show Association	Preston ...	Oct. 25 ...	Bronze ...	J. G. Shorroock, for best exhibit of cheese.

British Dairy Farmers' Association

PRIZE ESSAY ON A DAIRYING SUBJECT.

The Council offers a Prize of £15 and the B. D. F. A. Silver Medal for an Essay upon any practical or scientific subject relating to Dairy Farming or Dairying, conditionally upon sufficient merit being shown.

Preference will be given to one based on the original work and experience of the writer. Where the work of others is relied upon, full references must be given, either in footnotes or by numbers (1), (2), &c., with a list of authorities at the end.

The Essay should not exceed 5,000 words, and must be received by the undersigned on or before 1st October.

An Essay must be sent in a sealed envelope, bearing a *nom de plume*, and in another sealed small envelope, also bearing the *nom de plume*, the Author must insert his name and address.

The Prize Essay will be the property of the Association. Others will be returned to their respective Authors, but the Association reserves the right to retain Essays on subjects suitable for inclusion in the Annual Journal, which will be paid for at 10s. 6d. per Journal page.

FRED J. BULL,
Secretary,

28, Russell Square, London, W.C. 1.

National Dairy Examination Board

APPOINTED BY

THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND,
THE HIGHLAND AND AGRICULTURAL SOCIETY OF
SCOTLAND,

THE BRITISH DAIRY FARMERS' ASSOCIATION.

Regulations and Syllabus for the National Diploma in the Science and Practice of Dairying, 1938.

1. The Societies may hold annually in England and in Scotland, under the management of the National Dairy Examination Board appointed by them, one or more examinations for the National Diploma in the Science and Practice of Dairying; the Diploma to be distinguished shortly by the letters "N.D.D."
2. The Examinations will be held on dates and at places from time to time appointed and duly announced.
3. Forms of Entry for the Examination in England may be obtained from "The Secretary, Royal Agricultural Society of England, 16, Bedford Square, London, W.C.1," and must be returned to him duly filled up, with the necessary entry fee (see Regulation 13).
4. Forms of Entry for the Examination in Scotland may be obtained from "The Secretary, Highland and Agricultural Society of Scotland, 8, Eglinton Crescent, Edinburgh," and must be returned to him duly filled up, with the necessary entry fee (see Regulation 13).
5. Any candidate may enter for the Examination either in England or Scotland, but not in both, and a candidate who has once taken part in an Examination in England cannot enter for an Examination in Scotland, or vice versa. *An exception may be made in favour of a candidate re-appearing under Regulation 11 (3) provided special application is made at the time of entry.*

6. As a preliminary to the acceptance of any application for permission to enter for the Examination, a candidate must produce :—

- (1) A certificate testifying that he or she has attended a Diploma Course in the subjects of the Examination covering *two academic years* at an approved Dairy Training Institution and has satisfied the authorities of the Institution of his or her fitness for admission to the Examination. This period shall include six session months' instruction (consisting of not more than two periods) in practical dairy work.
- (2) Evidence that he or she has spent at least six months on an approved Dairy Farm and taken part in the work. This period must not run concurrently with the six months' practical training referred to in sub-section 1.

A Dairy Farm to be approved must have not fewer than fifteen cows kept in daily milking.

7. A candidate who has already taken a Degree in Agriculture of a British University, or a Diploma in Agriculture recognised by the National Dairy Examination Board, will be allowed to enter for the National Diploma in Dairying Examination after one year's training at an approved Dairy Training Institution, providing that such course includes at least six months' training in practical dairy work, and that he or she has worked for at least six months on an approved Dairy Farm.

8. In the Examination a candidate will be required to satisfy the Examiners by means of written papers, practical work, and *viva voce*, that he or she has :—

- (1) A general knowledge of the Management of a Dairy Farm, including the rearing and feeding of Dairy Stock, the candidate being required to satisfy the Examiners that he or she had had a thorough training and practical experience in all the details of Dairy work as pursued on a farm.
- (2) A thorough acquaintance, both practical and scientific, with everything connected with the management of a Dairy, and the manufacture of Butter and Cheese.
- (3) A general knowledge of Dairy Factory Management, Dairy Hygiene, Dairy Engineering and Dairy Book-keeping.

- (4) Practical skill in Dairying, to be tested by the making of Butter and Cheese.

NOTE.—A candidate must be prepared to make any one of the following varieties of Hard Pressed Cheese, the Examiner in Cheesemaking having the option of saying during the Examination what variety a candidate shall make:—

At the English Centre:—Cheddar, Cheshire or Derby.

At the Scottish Centre:—Cheddar, Dunlop or Cheshire.

9. Candidates will have the option of:—

- (a) Taking the whole Examination at one time; or
(b) Taking the Examination in two parts.

A candidate taking the Examination in two parts must take the following subjects at the first sitting: DAIRY FARMING, DAIRY HYGIENE, PRINCIPLES OF DAIRYING, DAIRY FACTORY MANAGEMENT AND DAIRY ENGINEERING, PRACTICAL CHEESEMAKING AND BUTTER-MAKING; the remaining three Papers, CHEMISTRY AND PHYSICS, DAIRY BACTERIOLOGY, and DAIRY BOOK-KEEPING, to be taken at the Examination in the following year.

10. The maximum marks obtainable and the marks required for a pass in each subject are as follows:—

WRITTEN EXAMINATION—				Max.	Pass.
Dairy Farming	...	...	...	150	90
Dairy Hygiene	...	...	...	100	60
Dairying—					
(a) Principles of Dairying	...	...	...	150	90
(b) Dairy Factory Management and Dairy Engineering	...	...	...	100	50
Chemistry—					
(a) General Chemistry and Physics	}		...	100	60
(b) Dairy Chemistry			...	...	...
Dairy Bacteriology	...	...	...	100	60
Dairy Book-keeping	...	...	...	100	50
PRACTICAL EXAMINATION—					
Hard-pressed Cheese-making	...	...	...	200	150
Blue-veined Cheese-making	...	...	...	100	75
Soft Cheese-making	...	...	...	100	75
Butter-making	...	...	...	200	150
				1,400	910

Honours will be awarded to candidates obtaining an aggregate of 80 per cent. (1,120) of the maximum marks (1,400) in the Examination, provided that they also obtain at least 80 per cent. (400) of the maximum marks (500) in the Dairy Farming, Hygiene and Dairying Papers.

11. A candidate taking the whole Examination at one time—

- (1) who fails in any part of the practical examination shall fail in the whole examination.
- (2) who fails in four or more subjects of the written examination shall fail in the whole examination.
- (3) who having passed in the practical examination, fails in not more than three subjects of the written examination, may, at the discretion of the Board, appear for those subjects in the following year.

The Board may in certain circumstances require evidence of further study in these subjects.

12. A candidate taking the Examination in two parts, and failing in a *single subject* in the first part of the Examination, may, at the discretion of the Board, appear for that subject along with the second part; or, in the case of a *single subject* of the second part, in the following year. The Board may in certain circumstances require evidence of further study in that subject. Failure in more than one subject will be regarded as failure in that part of the Examination. Failure in any part of the Practical Examination will entail complete failure.

13. The entrance fees will be as follows :— £ s. d.

For the whole Examination taken at one time 3 3 0

For the Examination taken in two parts :

First part 3 3 0

Second part 1 1 0

For reappearance, 10s. 6d. each subject.

14. The Board reserve the right to postpone, to abandon, or in any way or at any time to modify an Examination, and also to decline at any stage to admit any particular candidate to the Examination.

SYLLABUS OF SUBJECTS OF EXAMINATION.

1.—DAIRY FARMING AND DAIRY HYGIENE.

(a) Dairy Farming. *

Soils and Crops.—Types of Soils suitable for dairying, Rotations and systems of cropping. Cultivation, manuring and management of grain, root and forage crops used in dairying. Silage. Temporary and permanent pastures, haymaking.

Plant Physiology.—Roots, shoots, flowers, fruit and seeds of agricultural plants.

Dairy Cattle.—Characteristics of different breeds. Relation of conformation and appearance to Milk Yield. Choice of dairy cattle in relation to climate and soil. The milk yields of the more important breeds, and suitability for the milk trade, cream, butter and cheese production.

The management of a Dairy Herd. Cattle breeding and grading up of dairy stock. Calf rearing and management of young stock.

Milk Recording. Systems, and utilisation of results. Details of official schemes.

Foods and Feeding.—Summer and winter feeding of dairy cattle and young stock. Fodder crops and green forage. Roots. Ensilage. Concentrated foods, meals, cakes. Preparation of food. The effect of food on milk and its products.

Pig Keeping.—Characteristics of the more important breeds. The breeding, rearing and fattening of pigs. Production of pork and bacon.

Farm Management.—Systems of dairy farming. The selection, stocking and equipment of typical farms. Organisation of the farm and disposal of produce.

Dairy Economics.—The Dairy Industry of Great Britain and its relationship to Agriculture. The relative importance of the various products. The retail milk trade. Markets, Dairy organisation and co-operation. Modern developments in the Dairy Industry. Sources of imported Dairy Produce.

(b) Dairy Hygiene.

Animal Physiology.—General functions of the organs of the animal body. Breeding. Parturition. The structure of the udder and the process of milk secretion. Changes which food undergoes during digestion.

Veterinary Science.—The more important diseases of dairy cattle and their treatment. The transmission and eradication of diseases.

Milk Hygiene.—Sanitary conditions. Suitability of water supply. Methods of milking and handling of milk. Regulations affecting milk production. Milk in relation to Public Health.

Farm Buildings.—Situation, chief dimensions and construction of cow houses and dairy buildings. Housing for young stock and pigs. Air space and ventilation, drainage and water supply.

2.—DAIRYING.

(a) Principles of Dairying.

Milk.—Milking by hand and machinery. Importance of cleanliness. Cooling of milk. Prevention of contamination. Pasteurisation. Sterilisation. Keeping of milk. Milk testing and sampling. Use of Gerber and Babcock Testers. Interpretation of results. Legal standards. Legislation affecting milk production.

Cream.—Separators and their management. Different systems of cream raising and ripening of cream. Changes during ripening. Natural and artificial ripening, and preparation and uses of starters. Preparation of cream for sale. Uses of preservatives. Clotted cream.

Butter.—Churns and buttermaking appliances. Preparation of cream for churning. Washing and working butter. Butter milk. Packing and transmission of butter. Selection and keeping of butter. Salting. Use of preservatives. Characteristics of good butter and method of judging. Circumstances affecting the flavour, texture, colour and keeping qualities of butter. Potting butter for keeping. Causes of inferior butter.

Cheese.—Principles of manufacture. Appliances for cheese-making. The making of the principal varieties of British, Colonial and Continental cheese from cream, whole milk and skim milk. Acidity of milk. Common tests for acidity. Uses of rennet and its substitutes. Whey. Ripening and storage of cheese. Packing and sale of cheese. Making of cream and other soft cheese. Defects in cheese and their causes. Judging cheese.

(b) Dairy Factory Management and Dairy Engineering.

Factory Practice.—Milk depots and handling of factory milk. Systems of cooling and refrigeration. Pasteurisation. Factory butter and cheesemaking. Milk Powders. Condensed milk. Frozen milk. Ice cream. Dried casein. Fermented milk. Lactose and whey-butter. Margarine manufacture. Equipment of milk depots, butter, cheese and dairy factories.

Factory Management.—Factory routine. Organisation of labour. Handling of milk on arrival at the factory. Methods of dealing with the milk. Milk contracts. Dairy factory legislation.

Dairy Appliances and Machinery.—Appliances used in the production and handling of milk, butter and cheese. Care and management of engines and boilers, dairy factory machinery. refrigerating machinery.

Buildings.—Situation, construction and drainage of creameries, milk depots and dairy factories.

CHEMISTRY.

(a) General Chemistry and Physics.

Chemistry.—Elements, compounds and mixtures. Chemical symbols, formulæ and equations. Acids, bases, salts: their distinctive properties. Acidity and alkalinity; their quantitative estimation. The Atmosphere: its constituents and impurities; influence on dairying operations. Water: its constitution; pure and natural waters; impurities in water and whence derived. Importance of a good water supply in dairying. General knowledge of elementary chemistry. Oxygen; hydrogen; carbon; nitrogen; phosphorus and sulphur; common metals; common acids; compounds of potassium, sodium, ammonium, calcium.

Elementary organic chemistry; sugar, milk sugar, starch, alcohol, acetic acid, formaldehyde, butyric acid, lactic acid, glycerine, saponification of fats; albumen, casein, pepsin.

Physics.—The different forms of matter; solid, liquid, gaseous. Specific gravity and instruments for determining it. Temperature and methods of measuring it. Expansion; thermometric scales. Influence of temperature in dairy operations. Atmospheric pressure and its measurement. Hygrometry. Heat and its measurement; specific heat. Latent heat. Conduction. Convection. Radiation. Solution. Filtration. Distillation. Simple machines, such as levers, pulleys and light weighing machine.

(b) Dairy Chemistry.

Chemistry of Milk.—The nature, composition, properties and chemical constituents in milk. Microscopical appearances presented by milk. The influence of feeding. The changes which occur in the keeping of milk, and how produced. The natural and artificial souring of milk. Rennet, its nature and uses.

Milk Products.—Physical and chemical changes involved in the making and keeping of butter and in the manufacture and ripening of cheese. Separated milk. Condensed milk. Fermented milk. Synthetic milk. The use of preservatives.

Dairy Analysis.—Analytical methods, their theory and practice. A general knowledge of the methods employed in the chemical analysis of milk, butter and cheese. Adulteration of milk, cream, butter and cheese, the ways in which adulteration is practised, the changes in composition thereby produced and general knowledge of the methods employed in detecting the same.

Chemistry of Feeding.—The principal constituents of food material and the functions they severally fulfil. The influence of food constituents on milk production. Assimilation and digestion. The manurial value of foods. Milk and milk products as foods.

N.B.—Candidates are required to bring to the Oral Examination their Laboratory notebooks in sections (a) and (b) of this subject certified by their teachers as being the record of their laboratory work carried out during the course.

4.—DAIRY BACTERIOLOGY.

General Bacteriology.—Bacteria; their form, classification, growth and reproduction. The microscope and its use. Staining and microscopic examination of bacteria. Methods of isolation and cultivation. Preparation of culture media. Fermentations and chemical changes produced by bacteria. Enzymes and their action. Effects of heat, cold, sterilisation, pasteurisation, disinfectants and preservatives on bacteria and enzymes. Bacteriological examination of water supplies.

Bacteriology of Milk.—The changes produced by bacteria in milk. Useful forms and their functions. Harmful forms and their effects. Coagulation, discolouration, taints, &c. Bacteriological and other standards in relation to the cleanliness of milk.

Milk Products.—The bacteria concerned in the ripening of cream and butter making. "Starters," their preparation and management. The ripening of hard, soft and blue-veined cheese. Bacteria injurious to milk products, including condensed and dried milk.

Dairy Mycology.—Moulds and yeasts in dairy practice. Their form, classification, growth and relation to dairy products.

N.B.—Candidates are required to bring to the Oral Examination on this subject their Laboratory notebooks certified by their teachers as being the record of their laboratory work carried out during the course.

5.—DAIRY BOOK-KEEPING.

Reasons for keeping accounts on the farm and in the dairy factory.

General principles of double-entry book-keeping. Use of day-book, journal, ledger, cash-book, analysis cash-book, and petty cash book. Preparation of profit and loss account, capital account and balance sheet. Adjustments necessary for the owner-occupier.

Valuations. Basis of valuations for accounting purposes on the farm and in the dairy factory. Dates for stock-taking.

Methods of accounting suitable for dairy farms and factories. Forms for milk-retailing, cheese-making, and butter-making.

Preparation of a cost account for milk production.

Interpretation and use of accounting results, with special reference to their practical application.

Opening a Bank account. Cheques, deposits and over-drafts.

Assessment of the Farmer for Income Tax purposes.

6.—PRACTICAL SKILL IN DAIRY WORK.

Candidates must be prepared—(1) to produce before the Examination a satisfactory certificate of proficiency in the milking of cows, signed by a practical Dairy Farmer, and to satisfy the Examiners by a practical test, if so required; (2) to churn and make into Butter a measured quantity of Cream; and (3) to make one Cheese of each of the following varieties:—(1) Hard-pressed of not less than 30 lb. (See Note to Reg. 8 (4).) (2) Veined or blue-moulded of not less than 10 lb., and (3) also to make one or other of the following Soft Cheeses: Cambridge, Camembert, Coulommier, or Pont l'Évêque.

The British Dairy Farmers' Association.

CERTIFICATE IN DAIRY FACTORY MANAGEMENT.

Candidates for the Certificate in Dairy Factory Management must fulfil the following conditions :—

1. They must possess an approved Diploma in Dairying.
2. They must have had six months' practical instruction at an approved dairy factory, or at an approved dairy factory school.
3. They must obtain 60 per cent. of the possible marks in the examination for the Certificate in Dairy Factory Management.

Examination for the

CERTIFICATE IN DAIRY FACTORY MANAGEMENT.

1. Two papers will be set on the subjects outlined in the following syllabus.
2. Candidates will be examined orally in Factory Management with reference to the type of factory in which their practical training has been obtained.
3. Candidates must submit to the Examiners full notes of the work which has been carried out in the factories in which their practical experience has been obtained.

SYLLABUS OF EXAMINATION.

This Syllabus should not be viewed from a purely engineering standpoint, but students will be expected to have a general knowledge of the management of factory machinery :—

Paper 1.—Planning, Equipment and Management of a Dairy Factory.

Dairy Factories.—Site, building materials, construction, laying of floors, lighting, ventilation, drainage, sanitation, disposal and treatment of sewage and factory waste. Space requirements for the common types and sizes of factories.

Water Supply.—Water requirements; sources of supply. Examination for quality and purity. Methods of purification. Suitability of water supplies for dairy purposes. Sites for wells. Construction of wells. Artesian wells. Pumps for deep and shallow wells. Air-lift pumps.

Factory Equipment.—Artificial lighting and sources of power in the factory. Equipment required for various types of factories and approximate cost of same. The disposition and control of factory machinery.

Steam Plant.—Types of vertical and horizontal boilers and their relative advantages and disadvantages. Sizes of boilers required in dairy factories. Evaporating power of boilers. Setting and insulation. Cleaning out of boilers. Economical firing. Fuel used, *e.g.*, coal, coke and wood. Cost and calorific value. Fuel consumption and cost of steam production. Allocation of steam supply to different purposes in the factory. Boiler smoke stacks and their construction. Boiler fittings, including donkey pumps and water injectors. Feed heaters. Methods of economising steam supply.

Factory Machinery.—Steam, gas and oil engines. Electric motors, turbines, water power, comparison of the various types and their relative efficiency. Construction and working of the various types. Cost of maintenance. Power requirements of the factory and the most suitable combinations of power when different sources of energy are available. The management and fitting up of machinery, including electric fittings. Adjustment of bearings. Packing of glands. Fixing of brackets, &c. Lubrication of machinery. Oil containers and filters. Lubricants. Lubrication of high-speed machinery. Oils and grease for shafting. Arrangement for machinery and methods of transmitting power. Belts, types and uses. Repairs to belting. Pulleys and gearing. Methods of increasing and reducing speed. Labour-saving devices. Tools required for a dairy factory.

Factory Plants.—Construction and operation of milk apparatus, including clarifiers, pasteurisers, separators, milk pumps, refrigerators, &c. Refrigerating machinery, CO₂ and ammonia. Methods of operation and management. Cold storage and brine cooling. Efficiency in the transfer of heat in heating and cooling apparatus. Methods of carrying out efficiency tests under different conditions and outputs. Factory appliances, including cheese vats, holding vats, power churns, bottling machinery and other factory equipment. Their approximate cost and suitability of the various types. Methods of cleaning equipment, utensils and milk churns.

Factory Management.—Organisation of labour. Business management. Book-keeping. Cost accounts. Profit and loss in manufacturing. Stock-taking and depreciation. Railway rates and conditions. Road transport. Systems and comparative costs. Advertising. Markets and sale of produce. Co-operative organisation.

Factory Law.—Law as far as it affects the factory, the management and the produce. Factory and Workshops Act. Workmen's Compensation. Health Insurance. Employer's Liability and Trade Boards Acts. Industrial and Provident Societies Act. Rivers Pollution Act. Sale of Foods and Drugs Act. Milk and Dairies Acts, and other legislation as it affects the working of factories and the manufacture and sale of dairy produce.

Paper 2.—Handling and Utilization of Milk and Milk Products.

Handling of Milk.—Purchase, collection and distribution of milk. Management of milk on arrival at the factory. Weighing, sampling, testing, recording and cleaning. Methods of paying for milk and cream.

Utilization of Milk.—Methods of dealing with milk for sale for cream production, buttermaking, cheesemaking, and for the manufacture of other products.

Factory Products.—Preparation of cream for market. The manufacture and treatment of butter and cheese. Manufacture of condensed and powdered milk, casein and milk sugar, &c. Ice cream manufacture, &c. The utilization of by-products.

Pig-Keeping.—Feeding and management of pigs. The production of pork and bacon. Bacon curing.

The Entry Fee for each Candidate is £4 4s.

Any further particulars and Entry Forms for this Examination may be obtained from—

THE SECRETARY,

BRITISH DAIRY FARMERS' ASSOCIATION,

28, Russell Square, London, W.C. 1.

Examination for
CHEESEMAKING, CERTIFICATE.

The Association grants to any Candidate who satisfactorily passes the necessary Examination—

A Certificate of Merit for Proficiency in the Theory and Practice of Cheesemaking.

The Examination, which will extend over two or more days, will test the Theoretical Knowledge of the Candidates and their Practical Skill in Cheesemaking. Each Competitor will be required to answer, in writing, a set of questions within a given time, and will also be examined *viva voce*. On the same or following day a Practical Examination in Cheesemaking will take place.

Candidates will be considered to have passed the Examination if they obtain not less than 60 per cent. of the marks on each and every written paper and not less than 66 per cent. in the Practical Test.

Candidates for this Certificate must, at the time of entry, produce satisfactory evidence that they have received at least twelve months' instruction in the Theory and Practice of milk production and Cheesemaking, of which at least six months must have been spent at a recognised centre for dairy instruction. They must possess a sound knowledge of the subjects included in the following Syllabus.

Candidates will be required to make one Hard-pressed Cheese, either Cheddar, Cheshire or Derby, to be selected by the Examiner, and one Blue-veined Cheese, either Stilton or Wensleydale, to be selected by the Candidate. They must also have a knowledge of the manufacture of other varieties of Hard-pressed Cheese and of Soft Cheese.

Candidates are at liberty to bring their own utensils for the Practical Examination if they wish to do so.

The Examination for Cheesemaking Certificates is held at the British Dairy Institute, Reading, in the Autumn of each year, upon dates announced in the Agricultural and Dairy Press.

Entries will close 28 days prior to the date fixed for the Examination.

The Entry Fee is 10s.

SYLLABUS.

1. *Milk*.—The Food Value of Milk; The Yield of Milk from various Breeds; Secretion of Milk and Structure of the Udder; Milking by Hand and Machine; Handling of Milk from Cow to Dairy; Importance of Cleanliness; Production of Highest Grade Milk; Cooling of Milk; Sale of Milk; Influence of Food on the Yield, Flavour and Fat Contents of Milk; Composition of Milk, Nature and Properties of its Constituents; Differences between Morning and Evening Milk and their Causes; Methods of Sampling and Simple Methods of Testing Milk, as the Lactometer, Creamometer, and Centrifugal Fat Testers; Testing for Acidity; Causes of Fermentation; Colostrum, its Nature and Properties; the Keeping of Dairy Records; the Handling of Evening's Milk for Cheesemaking; Properties of Milk suitable for Cheesemaking; Taints in Milk, their Causes, Effects and Remedies; Tests for such Taints; the Ripening of Milk for Cheesemaking; Methods and Reasons for Ripening; use of Natural and "Culture" Starters; Pasteurisation of Milk; Chilled Milk; their subsequent use for Cheesemaking; Special Testing of Milk, Whey, and Curd requisite in a Cheese Dairy; Utilization of Dairy By-Products.
2. *Cheese*.—Rennet: its Preparation, Properties, and Action upon Milk; Testing its Strength; Storage of Rennet; Substitutes for Rennet; Anatto; a General Knowledge of the Manufacture of the Principal Varieties of Hard-pressed, Blue-veined and Soft Cheeses, including the use of wood and metal tubs and jacketed vats; Methods of Scalding; the Development and Control of Acidity in Curd; Salting and Brining in Cheesemaking; Bandaging; Ripening and Storing of Hard-pressed, Blue-veined and Soft Cheeses; Defects in Cheese and their Causes; Composition of Cheese; Composition and Utilization of Whey; the Manufacture of Whey Butter; the Equipment of a Cheese Dairy and its Cost; the care of Utensils; the Detailed Principles and Practice requisite for the Manufacture of one of the following types of Cheese :—
 - (a) A Hard-pressed British Cheese (not less than 25 lbs. weight).
 - (b) A Blue-veined British Cheese (not less than 10 lbs. weight).

Any further particulars and Entry Forms for this Examination may be obtained from—

THE SECRETARY,

BRITISH DAIRY FARMERS' ASSOCIATION,
28, Russell Square, London, W.C. 1.

Examination for
BUTTERMAKING CERTIFICATE.

The Association grants to any Candidate who satisfactorily passes the necessary Examination—

A Certificate of Merit for Proficiency in the Theory and Practice of Buttermaking.

The Examination, which will extend over two or more days, will test the Theoretical Knowledge of the Candidates and their Practical Skill in Buttermaking. Each Competitor will be required to answer, in writing, a set of questions within a given time, and will also be examined *viva voce*. On the same or following day a Practical Examination in Buttermaking will take place.

Candidates will be considered to have passed the Examination if they obtain not less than 60 per cent. on each and every written paper, and not less than 66 per cent. in the Practical Test.

Candidates for this Certificate must, at the time of entry, produce satisfactory evidence that they have received at least three months' instruction (not necessarily at a Dairy School) in the theory and practice of Milk and Cream production and management, and Buttermaking. They must possess a sound knowledge of the subjects included in the following syllabus.

Candidates are at liberty to bring their own utensils for the Practical Examination if they wish to do so.

The Examination for Buttermaking Certificates is held at the British Dairy Institute, Reading, in the Autumn of each year, upon dates announced in the Agricultural and Dairy Press.

Entries will close 28 days prior to the date fixed for the Examination.

The Entry Fee is 5s.

SYLLABUS.

1. *Milk*.—The Food Value of Milk; the Yield of Milk from various Breeds; Secretion of Milk and Structure of the Udder; Milking by Hand and Machine; Handling of Milk from Cow to Dairy; Importance of Cleanliness; Production of Highest Grade Milk; Cooling of Milk; Sale of Milk; Influence of Foods on the Yield, Flavour and Fat Contents of Milk; Composition of Milk, Nature and Properties of its constituents; Differences between Morning and Evening Milk and their causes; Methods of Sampling and Simple Methods of Testing Milk, as the Lactometer, Creamometer, and Centrifugal Fat Testers; Testing for Acidity; Causes of Fermentation; Colostrum, its Nature and Properties; the Keeping of Dairy Records.
2. *Cream*.—The Various Methods of Obtaining Cream; the Construction and Use of the Utensils employed; Separators, the Construction and Use of the various Types; Composition of Cream, Separated Milk, Skimmed Milk, and Buttermilk, with Simple Tests for Fat in same; the Ripening of Cream—Objects and Results; Changes during Ripening; Testing for Acidity; Natural and Artificial Ripening and Preparation of Starters; the Preparation of Cream for Churning; Preparation of Cream for Sale; Clotted Cream.
3. *Butter*.—The Various Methods of obtaining Butter, including the Churning of Whole Milk; Utensils required, and the Preparation, Use, and Care of same; the Process of Butter Manufacture in all its details; Conditions which affect the Butter Yield; Circumstances affecting the Flavour, Texture, Colour, and Keeping Properties of Butter; Dry-salting and Curing of Butter; Faults in Butter and their Causes; Composition and Properties of Good Butter; Composition and Causes of Inferior Butter; Methods of Judging Butter.

Any further particulars and Entry Forms for this Examination may be obtained from—

THE SECRETARY,

BRITISH DAIRY FARMERS' ASSOCIATION,

28, Russell Square, London, W.C. 1.

EXAMINATIONS

AT

LOCAL CENTRES.

In order to meet the convenience of Students at Dairy Schools, members of local Societies, and other persons, the Association will conduct Examinations for its Certificates at any place in the United Kingdom upon receiving satisfactory proof that the following conditions will be observed :—

That the School, Society, County Council, or other body requesting such Examination to be held undertake :—

- (1) To supply all necessary appliances and materials.
- (2) To pay the fees and expenses of the Examiners.
- (3) To supply the milk required free from preservatives and fit for Cheesemaking.

Copies of Question Papers set at recent Examinations may be obtained at 3d. per copy.

Applicants are requested to state whether Cheese or Butter questions are required.

Further particulars and Entry Forms for Students may be obtained from—

THE SECRETARY,

BRITISH DAIRY FARMERS' ASSOCIATION,

28, Russell Square, London, W.C. 1.

National Dairy Examination Board.

Appointed by the Royal Agricultural Society of England, the Highland and Agricultural Society of Scotland, and the British Dairy Farmers' Association.

Report on the Results of the Forty-third Examination for the National Diploma in Dairying, 1938.

1. The tenth Examination under the auspices of the present Board—and the Forty-third Annual Examination for the National Diploma in Dairying—was, by the courtesy of the Authorities, held during September at the University and British Dairy Institute, Reading, for English and Welsh students and at the Dairy School for Scotland, Auchincruive, Ayr, for Scottish students.

2. As a preliminary to the acceptance of an application for permission to enter for the Examination, a candidate was required to produce :—(1) A certificate testifying that he or she had attended a Diploma Course in the subjects of the Examination covering *two academic years* at an approved Dairy Training Institution; (2) Evidence that he or she had spent at least six months on an approved Dairy Farm and taken part in the work.

3. A candidate who had already taken a Degree in Agriculture of a British University or a Diploma in Agriculture recognised by the Board, could enter for the Examination after one year's subsequent training at an approved Dairy Training Institution, providing that such course included at least six months' training in practical dairy work, and that he or she had worked for at least six months on an approved Dairy Farm.

4. The written Examination included papers in Dairy Farming, Dairy Hygiene, Principles of Dairying, Dairy Factory Management and Dairy Engineering, Chemistry and Physics, Dairy Bacteriology and Dairy Book-keeping. The Practical Examination comprised Hard-pressed, Blue-veined and Soft Cheese-making, and Butter-making.

5. A candidate had the option of taking the whole examination at one time or of taking only Part I, which omits Chemistry, Bacteriology and Book-keeping. These last three subjects—constituting Part II—have to be taken at the examination of the year following that at which Part I was passed.

6. A candidate taking the whole examination, who, having passed in the practical examination, failed in not more than *three* subjects of the written examination might, at the discretion of the Board, appear for those subjects in the following year. A candidate who failed in four or more subjects of the written examination, or in any part of the practical examination, failed in the whole examination.

7. A candidate taking the examination in two parts, and failing in a *single subject* in Part I, might, at the discretion of the Board, appear for that subject along with Part II; or, in the case of a *single subject* of Part II, in the following year. Failure in more than one subject was regarded as failure in that part of the Examination. Failure in any part of the practical examination entailed complete failure.

8. At both Centres the same Questions were answered by the candidates from September 7th to 9th. The Practical Examination as well as the *viva voce* was conducted at the English Centre from September 12th to 16th, and at the Scottish Centre from September 19th to 23rd.

9. At the English Examination 100 candidates presented themselves. Of these, three entered for Part II, 29 appeared for re-examination in subjects in which they had previously failed, 66 took the whole examination, and two entered for Part I only. Seventy-five candidates were awarded the Diploma, but none attained to the standard for honours. The names, in alphabetical order, of those who were successful are as follows :—

ENGLISH CENTRE.

Diploma.

George H. Beard, Lilian M. Bridgman, Horace H. Brownlow, May A. Buck, Frank E. Burr, Basil R. O. Chilcott, Muriel A. Cole, James E. Craig, Margaret A. Davey, Elsie Davies, Mervyn G. Davies, Nora E. Davies, Janet L. Davis, Frederick W. Dunnett, Stanley H. Dunnett, Frances E. L. Epps, John A. Evans, Willie Evans, John Fairhurst, John S. Farmer, Nancy M. Frew, Francis J. Fullbrook, Strickland H. Gibson, Leslie N. Gingell, Arthur F. Hall, Richard Hall, Beatrice M. Hallsworth, Sheila M. Hamilton, Monica Haslam, Mary C. Hatch, Jean E. Hayes, Philip J. Hellard, Erica R. Hewett, Fay E. Hillson, Douglas C. E. Johns, Eleanor M. Johnson, Gwyneth M. B. Jones, Margaret Jones, Margaret J. E. Jones, Marie Jones, Mary E. Jones, Rhys G. Jones, Marion Kitchin, Horace P. Ledger, Nesta M. Lewis, John T. Richardson, Jean K. H. Lucas, John Luscombe,

Elizabeth V. Lyon, John M. Marsden, Marmaduke J. Matthews, Helen M. May, Michael E. Merchant, John M. Milne, Nora K. Murphy, Glyn M. Phillips, Geoffrey M. Ramsden, Michael M. Richardson, John R. Robertson, Harry Rostern, Joan Sharman, Joan R. Skinner, Elizabeth G. Small, Norah F. Tanner, Barbara C. Taylor, Annie E. Thomas, Mary E. Thomas, Bessie Thornborrow, Alice M. Tyvold, Clare D. Vernon, John W. Versfeld, John W. Vesey, John P. Walker, Teresa D. Wickens, Stephen Wooldridge.

The two Part 1 candidates failed in a single subject, and 14 taking the whole Examination failed in not more than three subjects, for which they will be allowed to reappear next year.

10. At the Scottish Centre, 49 candidates presented themselves—one entered for Part I, 36 took the whole Examination, and 12 appeared for re-examination in subjects in which they had previously failed. Thirty-four candidates gained the Diploma, one with Honours. Their names, in alphabetical order, are as follows:—

SCOTTISH CENTRE.

Diploma with Honours.

William W. Gatenby.

Diploma.

Andrew G. Archibald, Gwynneth Austin, Anne B. Black, James McGregor Calderwood, Khandes Desai, Elizabeth M. W. Duff, Millicent I. Duncan, Alee H. Fitton, James K. Gaunt, Thomas W. S. Glover, Mary H. Gray, Kate M. Harbutt, James L. Hardie, Geoffrey W. Hart, William Hewitt, John Hutchison, Mary D. Langlands, Gavin Lawrie, Janetta M. S. Logie, Hamilton A. Montgomery, Jessie Morrison, Margaret L. Pirie, Hannah Pullar, John Reid, Albert W. G. Rose, Margaret E. Russell, Ahmed Safwat, James Sheard, Charles J. Swan, Helen B. Sword, Kathleen R. Taylor, John N. Turnbull, Joyce Weightman.

Passed Part I.

Enid H. S. Davidson.

Ten candidates failed in not more than three subjects, for which they will be permitted to reappear in 1939.

All the candidates at the Scottish Centre had been students at the Dairy School for Scotland, Auchincruive, Ayr.

11. The Examiners at both Centres were: David Wyllie, N.D.A., N.D.D., C.D.A., C.D.D. (Glas.) (*Dairy Farming, Dairy Hygiene and Practical Butter-making*); J. Lyons, M.Sc., A.R.C.Sc.I., N.D.A., N.D.D. (*Principles of Dairying, Dairy Factory Management and Dairy Engineering, and Practical Cheese-making*); Dr. S. Allinson Woodhead, F.I.C. (*Chemistry and Physics*); Andrew Cunningham, D.Sc. (*Dairy Bacteriology*); D. Witney, B.Com. (*Dairy Book-keeping*).

Results of Examinations held by the British Dairy Farmers' Association during 1938.

EXAMINATION FOR BUTTERMILKING AND CHEESEMAKING CERTIFICATES AT SOMERSET FARM INSTITUTE, CANNINGTON; ON MONDAY, TUESDAY AND WEDNESDAY, MARCH 21ST, 22ND AND 23RD.

- A Certificate of Merit for Proficiency in the Theory and Practice of Buttermaking awarded to Frances K. Board, David G. Box, Monica J. Brunt, Norman F. W. Eyres, Nesta M. Ham, Phyllis Howes, Nesta M. Lewis, Vera E. Mead, Joan C. Morgan, El Sayed Mosleh, Phyllis E. Nurse, Ruby S. M. Pearcey, Evelyn J. Pickford, Francis J. Poole, Winifred J. Rawle, Sybil Webber and Mavis White.
- A Certificate of Merit for Proficiency in the Theory and Practice of Cheesemaking awarded to David G. Box, Monica J. Brunt, Norman F. W. Eyres, Nesta M. Lewis, El Sayed Mosleh, Ruby S. M. Pearcey and Francis J. Poole.

EXAMINATION FOR BUTTERMILKING AND CHEESEMAKING CERTIFICATES AT THE SEALE-HAYNE AGRICULTURAL COLLEGE, NEWTON ABBOT; ON FRIDAY AND SATURDAY, JULY 1ST AND 2ND.

- A Certificate of Merit for Proficiency in the Theory and Practice of Buttermaking awarded to Muriel A. Cole, Richard P. Doney, Honor N. Kingwell, John R. Robertson and George H. Southwood.

EXAMINATION FOR BUTTERMILKING AND CHEESEMAKING CERTIFICATES AT THE FARM INSTITUTE, SPARSHOLT; ON MONDAY, TUESDAY AND WEDNESDAY, JULY 11TH, 12TH AND 13TH.

- A Certificate of Merit for Proficiency in the Theory and Practice of Buttermaking awarded to Ruth E. Bennett, Dorothy E. Bright, Zena J. Clarke, Margaret J. Dyson, Edith E. Hawkins and Alec G. Walbridge.
- A Certificate of Merit for Proficiency in the Theory and Practice of Cheesemaking awarded to Ruth E. Bennett, Dorothy E. Bright, Muriel A. Cole, Margaret J. Dyson, Edith E. Hawkins and Alec G. Walbridge.

EXAMINATION FOR BUTTERMILKING AND CHEESEMAKING CERTIFICATES AT THE STUDLEY COLLEGE, WARWICKSHIRE; ON MONDAY, TUESDAY AND WEDNESDAY, JULY 25TH, 26TH AND 27TH.

- A Certificate of Merit for Proficiency in the Theory and Practice of Buttermaking awarded to Myrra M. Mackenzie, Jean A. Mitchell, Pauline H. Turpin, Gabrielle A. Vasey and Barbara A. Wallace.
- A Certificate of Merit for Proficiency in the Theory and Practice of Cheesemaking awarded to Ruth R. Davies, Fierna M. Droop, Jean L. Gordon, Catherine B. Haine, Marian E. Pollock and Jean F. Smithson.

EXAMINATION FOR BUTTERMaking CERTIFICATE AT THE
AGRICULTURAL INSTITUTION, USK, MONMOUTHSHIRE;
ON MONDAY, TUESDAY AND WEDNESDAY, AUGUST 8TH, 9TH
AND 10TH.

- A Certificate of Merit for Proficiency in the Theory and Practice of Buttermaking awarded to Lilian M. Belben, Owen Bevan, Muriel J. O. Clayton, David K. Davies, Henry T. Davies, Ruth Follett, Emily E. Higgs, Jessie Hindson, Trevor G. James, Frederick W. M. Jones, Glen G. D. Jones, Lyndon Jones, Helen M. Lockhart, Arnold Lynas, Helen M. Miles, Alan D. Ovens, Maybess Powell, Brenda Pullin, Dorothy E. Street, Doris M. Watts and Barbara S. Wilson.
- A Certificate of Merit for Proficiency in the Theory and Practice of Cheesemaking awarded to Lilian M. Belben, Muriel J. O. Clayton, Helen M. Miles and Maybess Powell.

EXAMINATION FOR CHEESEMAKING CERTIFICATE AT THE
BRITISH DAIRY INSTITUTE, READING; ON MONDAY,
TUESDAY, WEDNESDAY AND THURSDAY, AUGUST 29TH,
30TH, 31ST AND SEPTEMBER 1ST.

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 Brown, Brig.-Gen. H. Clifton, M.P., Holmbush, Faygate, Sussex.
 Brown, J. A. & W., Cormiston Towers, Biggar, Lanarkshire.
 Brown, James A., 31, Bridge Street, Bristol.
 Brown, J. Haldane, 33, Sylvan Grove, Peckham, S.E. 15.

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 Brown, J. Harold, Great Barford, Bedford.
 Brown, John H., Shrewbridge House, Nantwich, Cheshire.
 Brown, Robert B., 77, Portland Street, Kilmarnock.
 Brown, T., The Grove, Kent's Green, Haslington, Cheshire.
 Brown, W., Polar Works, Manchester Road, Wilmslow, near Manchester.
 Brown, Capt. Wm. C., Wealds Gate, Wadhurst, Sussex.
 Brunton, W., Tollesby Farm, Marton-in-Cleveland.
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 Bull, Mrs. Ida M., The Offices, Sutton Veny, Warminster.
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 Burrell, Capt. W. R., Knepp Castle Estate Office, Horsham.
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- Davis, H. E., New Zealand Dairy Produce Board, St. Olaf House, Tooley
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 Evans, Mrs. R. H., 32, Cardiff Road, Pwllheli, Carnarvonshire.
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 Evans, W., Agricultural Office, Builth Wells, Breconshire.
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 Rowling, J. Ridley, 52, Walnut Tree Walk, Kennington Road, S.E. 11.
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 Rylands, Sir W. Peter, Massey Hall, Thelwall, near Warrington.

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 Stern, H. C., 12, Farringdon Avenue, London, E.C. 4.
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 Warren, F. C., 115, High Road, South Woodford, Essex.
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- Welford, Edward, 277, Kentish Town Road, London, N.W. 5.
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	£ s. d.	£ s. d.	£ s. d.	£ s. d.
400	15 0 0	7 0 0	5 16 8	2 3 4
500	18 15 0	7 0 0	7 5 10	4 9 2
600	22 10 0	7 0 0	8 15 0	6 15 0
700	26 5 0	7 0 0	10 4 2	9 0 10
800	30 0 0	7 0 0	11 13 4	11 6 8

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